GREEN FIRE

John Taine

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John Taine has also written

THE PURPLE SAPPHIRE

QUAYLE'S INVENTION

THE GOLD TOOTH

E. P. Dutton & Company

GREEN FIRE

The Story of the Terrible Days in the Summer of 1990. Now told in full for the first time

BY

JOHN TAINE

Author of "The Purple Sapphire," "The Gold Tooth," etc.

NEW YORK

E. P. DUTTON & COMPANY

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CONTENTS

CHAPTER		PAGE
I.	The Warning Flash	3
II.	Vera's Plan	15
III.	A Love Match	25
IV.	An Unexpected Visitor	37
V.	The Man in the Red Shirt	54
VI.	MacRobert Tries His Muscles	85
VII.	The First Extras	95
VIII.	In the Dragon's Den	110
IX.	A Handsome Offer	121
X.	A Declaration of War	127
XI.	The First Shot	144
XII.	The Light in the Northern Skies	155
XIII.	A Deserter	169
XIV.	Miss Adams's Story	181
XV.	The Eleventh Hour	201
XVI.	The Second Extras	215
XVII.	The Spy	225
XVIII.	Luck and Wits	246
XIX.	Brande Distinguishes Himself	257
XX.	Refreshments for Three	267
XXI.	Playing with Ruin	275
XXII.	A Surrender	285
XXIII.	The Battle of the Giants	299
XXIV.	11:15 P. M.	305

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CHAPTER I

The Warning Flash

"FATHER, do go to bed! This is the fifth time I've been down since midnight, and I shall not warn you again. You may not need sleep, but I do." And with a slight raising of the chin, Vera took up her position just inside the door of the electrical laboratory. Alan Cunningham glanced first at Vera, then at the clock, and last at James Ferguson, her incorrigible father. What a pity, he reflected sleepily, that nature had not made Vera a man instead of the whole-souled girl she was. With just a shade more firmness her commands might have been obeyed. And Alan, instead of trying to keep one eye half-open at three in the morning, should long ago have been blissfully asleep.

"It is no use, Vera," he said. "Since eight o'clock yesterday evening your father has been trying to do the impossible, and he won't be happy till he does it. Run along to bye-bye like a good child. I shall stay with our revered Chief until one of us expires of insomnia."

"Alan!" she cried sharply, "you are asleep now. And father is too—he has been in exactly that position for

the last three hours." She hurried to her father and touched him lightly on the arm.

The effect was electric. An evil green spark crackled up the silk sleeve of her dressing gown, flickered for an instant at her bare throat, and with a hiss died upon her lips. With a startled "Oh!" she knelt down and peered into her father's face. Thoroughly alarmed, Alan pried the ray analyser from his Chief's grasp to see if by chance some faulty connection had done him a serious mischief.

"It is not that," she said, reading his thought. "The insulation is perfect. That spark was not electricity. . . . Father! why don't you speak?" He gave no sign of life although his hands were still warm.

Vera stood up, mistress of herself and of the situation.

"Call Thompson and Wills to help me upstairs with him. Take the large car and go for Doctor Brande. If he is out, fetch Kalen. If you can't get Kalen, bring the first doctor you find."

"Telephone?" Alan suggested, but she cut him short.

"Brande has no night duty at the Department, so does not wear his instrument when he retires. Do as I say. Hurry!"

Within twenty minutes, Cunningham, spurred by her anxiety, had made the return trip to Yonkers, and was back at Two Hundred and Fifth street with Doctor Brande.

"This way," Alan ordered, shoving the protesting physician before him into the electrical laboratory,

"it's the shortest. Never mind your pyjamas. They won't be noticed beneath your overcoat."

Such is the perversity of human nature that even in the most critical and solemn moments it can turn aside to smother a grin at the ludicrous. Alan's anxiety for the Chief was as keen as if he had been his own father. Indeed, Ferguson was closer to him than to his own parents, both of whom died before Alan was five, leaving him to the care of their generous friend. And now when he lay stricken, perhaps near death, twenty years of his unbroken kindness rose up to choke Alan. Yet he could not restrain a smile at the dapper little man with the neat Vandyke beard bashfully minuetting before him into the laboratory. He did not go far.

"You idiot!" he snapped, dancing round to face Cunningham, full of rage, "you did this to make an ass of me! There's Ferguson as well as he ever was. And there's Miss Ferguson too! Let me out of this before she sees my feet."

True enough, the Chief was standing in the far corner of the laboratory, one hand against the great Thor dynamo, the other resting lightly on his daughter's shoulder. Over beneath the high north windows, Thompson and Wills, ostentatiously busy about some trifle, were engaged in stealthily watching the Chief. The anxiety on their faces showed plainly their realization of the loss the world would sustain should it lose James Ferguson at this most critical hour.

"Don't go! Doctor Brande," cried Vera, hastening toward him. "It was so good of you to come at once," she continued, holding out her hand to the embarrassed

healer; "thank you ever so much. But father is better. It must have been a slight faintness from overwork, don't you think? How does he look now?"

Trailing one foot after the other, Ferguson joined them. Doctor Brande looked at the Chief's face, and Alan saw him start involuntarily. He instantly recovered his professional calm, and neither father nor daughter read from his face the least cause of anxiety. In that lightning change of countenance Cunningham glimpsed the greatness of the little doctor, and understood how in spite of mannerisms and a morbid sensitiveness as to his clothes, Brande stood easily at the top of his profession. Little over forty, he was already the brains and energy of the Department of Public Health. His position he had won by sheer ability, for he was by no means wealthy. Practising his profession but rarely, and then only as a favor to his most intimate friends, he devoted his talents to the advancement of science for the public good. For all his foibles it was impossible not to respect this little man, who, had he chosen, might have made his hundreds of thousands in private practice, but who by deliberate choice gave the public all that was in him for a mere pittance.

"Father looks quite well, does he not, Doctor?"

"Perfectly, I assure you, Miss Ferguson. Perhaps a little tired, that is all. A week's rest will set that right."

"Rest!" exclaimed the Chief. "How can we loaf now with the end in sight?"

"But you must, father. Doctor Brande insists. At

any rate," she pleaded, her voice softening, "promise me not to work more than ten hours a day for the next week? You shall come out on the links with Alan and me in the forenoons, and I'll leave you in peace from two till twelve. Do come out with us tomorrow! MacRobert has promised to be there, so you will have a good excuse for coming. Perhaps you'll be able to talk him into joining our laboratories. Tomorrow may be just the lucky day! And if you come, I'll promise to speed up those calculations for Thompson's new rays."

The Chief took her up eagerly. "Will you get them done in a week?" he asked, his eyes beginning to glow with something of their accustomed light.

"I will, even if we have to cut the match with Jerome and Taverson."

"It's a go!" beamed the Chief. "You have been shirking that job for a month. Not that I blame you; I wouldn't do it myself. But honestly, Vera, I do wish you would get it finished soon. Wills says he has a hint that the Consolidated people are after the same thing. If they win we shall be badly pinched, and we need every cent we can get for carrying on the great research. And if we get these new rays working on a commercial scale before the end of summer, we shall get plenty of money to keep us running through the winter and spring."

"Don't you worry, father. I'll finish before next Tuesday—seven days at the most."

"How do you know," he asked, laughing, "that I did not sham sleepy just to trick you into this?"

"Father," said Vera seriously, "if I thought you guilty of such a thing, I would deliberately do the whole lot wrong and let you take the consequences."

Cunningham left them chatting and laughing, and strolled over to Wills and Thompson. How could Vera look into her father's face and not see the change? The Chief had aged ten years in as many hours. Surely a daughter should notice such things more readily than mere outsiders like himself and Brande. Perhaps she had noticed the startling change, and wisely perferred to ignore it.

"What does Brande say?" Wills asked anxiously.

"Nothing much. The Chief seems to be recovering. What do you suppose happened? Did some of your fancy rays get loose, Thompson?"

"I thought of that the first thing," he replied. "In fact, Wills and I have just been through my ray chambers to see that everything is all right. We suspected some careless assistant of having left a generator sparking. But everything is just as I left it last week."

"And you have done no ray work since?"

"Not a single experiment. Except just now with Wills, I haven't been near the chambers for eight days."

"So it can't be that. Did the Chief make any guess?"

They looked questioningly at each other before Thompson answered.

"Ferguson is still dazed. He acts exactly as if something had struck him a violent blow on the head."

"That is strange," Alan remarked. "He was around

none of the apparatus. In fact he did not stir from his chair for over five hours."

"We might put it all down to simple overwork and lack of sleep," said Wills, "but for one inexplicable fact. For a few moments just before you came back, Vera was similarly affected."

"A plain case of subconscious sympathy," Alan suggested. "They are very close to each other. Vera often seems to feel instinctively what is passing in her father's mind."

"Perhaps," Wills agreed. "But this appeared to be something different. For several minutes her mind completely lost its edge. She could not cut through the commonest ideas to get at what she was trying to express. Ferguson asked her what the flash looked like, what color it was, and so on. For fully five minutes she floundered about before she got at green. Her struggle to name that color was simply pitiful. She began with the sun, and after some hesitation rejected that. Was it the color of sunlight? She could not say definitely at first, but she thought not. Then she was sure that the color in some way resembled starlight, but how she could not define. By a happy inspiration Thompson suggested the spectrum of starlight. At first, incredible as it sounds, she failed to associate anything whatever with the word spectrum; and Thompson had to reconstruct the image for her from the beginning. Presently she grasped the idea of analysing starlight into its colors with a prism, and said that she felt sure that was the right clue. The oddest part of the whole performance was that neither

she nor Ferguson seemed to find anything strange in her temporary loss of ideas with which she has been familiar for over ten years. She recalled the analysis of light fairly well, and I then suggested that perhaps the flash had been the color of one of the sharp lines crossing the spectrum of starlight. She agreed, but with an important reservation. It was not one of the lines in ordinary starlight. Then in what kind, we asked. After a severe struggle she recalled the nebulae. With a little more prompting she got the description she wanted. The flash, she said, had been exactly the color of that unique green line which occurs in the spectra of nebulae and nowhere else in nature."

"That is singular," said Cunningham, "for ever since I saw the flash I have been haunted by an eerie sensation of having seen the same strange color somewhere else, but where it was impossible to recall. Vera's description fits it exactly. She is right. The green flash was the precise color of the nebulium line. What did the Chief say?"

"Very little," Thompson answered. "He seemed uneasy, rather than puzzled as Wills and I were. He asked Vera if the flash or spark had affected her as might an electric discharge. She hesitated, then said she might as well give her own description of how it felt, although she knew we would think it absurd."

Thompson himself hesitated before repeating Vera's description.

"What did she say?" Cunningham prompted.

"Well, she said that when the flash, or spark, or whatever it was, ran up her arm to her neck and face, she

felt as if 'something arbitrary were handling her.' We could get nothing more definite. 'Something arbitrary,' she declared was the one thing to describe the gripping, fingering, running sensation from her arms to her throat and face."

"Nerves," commented Cunningham.

"Undoubtedly," Wills assented. "For she also declares that the flash made no sound whatever. It was absolutely silent, she maintains. How about it? You were there. Was that flash silent or was it not?"

"Absurd!" Cunningham exclaimed, and paused. "Now that you speak of it," he confessed, "the flash made no sound. My associations of sound—crackling and hissing—with it, are mere reminiscences of other flashes, electrical, ray discharges, and so on. But the green flash was not like any of these. It was something in a class by itself. Vera is right again."

"Shall we go over to them now?" Thompson asked. "They may smell a rat if we stay whispering here longer. Vera seems fully recovered."

"You will join David and me on the links tomorrow morning, Doctor Brande?" she was saying. "Why not come for breakfast? We shall have it at nine sharp, so as to get an early start."

Now Brande hated golf for men with a furious and unreasoning hatred. He considered it an effete survival of the early twentieth century and the age of millionaires. The sight of a healthy man following an idiotic india-rubber toy over a hand-massaged lawn, drove him to a profanity which was quite creditable for a man of his correct and gentle disposition.

It was the one spectacle which provoked his wrath. "Why don't they take up knitting, or infant nursing, or china painting," he would storm, "if they must bore each other to death?" Not even his consuming worship of Vera could tempt him onto the green to try his luck. He preferred to watch her from the cool shade of the club-house porch. Thus far, but no farther would his love venture. Not even to oust his rival, the red-headed MacRobert, would he dream of experimenting with his highly polished clubs.

So it was with mixed gratitude that he accepted Vera's invitation to breakfast.

"I shall be delighted," he said. "Possibly I may be a few minutes late for breakfast, but please don't wait. There is a rush on at the Department, and they may want me there before my regular afternoon hours."

"Ought you to take a half holiday at all, Doctor?" Alan asked maliciously.

"Oh, the work won't take long," he replied lightly. "We have just been investigating some reports of a curious nervous disorder that has appeared recently among the Russian and Chinese laboring classes."

"Nothing serious, I hope?" said the Chief.

"We think not. It seems due more to discontent over wages and living conditions than anything else. As usual, your enemy the Consolidated Power Corporation seems to be at the bottom of it. They are grinding landholders and laborers alike, until their lives are little better than slavery to the greed of one man."

"You can't mean Jevic?" Wills asked ironically.

"Oh, of course not," Brande replied in the same vein.

"Never mind, Brande!" said the Chief. "I feel confident that we are on the right track at last. Before next summer we shall have solved the great problem, and Consolidated Power will be a nightmare of the past!"

Brande looked at the Chief's glowing face, and his own caught some of Ferguson's enthusiasm.

"I believe it!" he cried. "But take care of yourself. If you go down, who will be there to carry on?"

"MacRobert," said the Chief quietly. "I sometimes think," he continued reflectively, "David will never consent to ally himself with the Independent Laboratories until I am shelved and he can be master."

"Oh, father, don't!" Vera cried, taking his arm in hers. "You know David is not that kind. And even if he were, he could not manage our hundred and one departments as you do. In his sciences he is great—we all know that. But they don't make administrators from such stuff as David. He is too obstinate."

"Say persevering, Vera," he corrected her. "It sounds so much more distinguished, also it is in keeping with his Scotch ancestry. Well, Brande, we shall see you a little after nine?"

"You may count on it. And now you had better go straight to bed. You'll only get four hours sleep, and you have had an exciting night. Alan, drive me home."

"I'm hanged if I do," objected Cunningham. "You

can walk. I'm going to bed. The fresh air will do you no end of good."

"If you don't take Doctor Brande home, Alan," said Vera, "you get no breakfast."

Of course that settled it.

CHAPTER II

Vera's Plan

LOOKING back now at this distance of time on that cool summer morning in the fateful year of 1990, it seems unbelievable that MacRobert, Vera, Brande and Cunningham could have idled away three priceless hours with no suspicion of what hung over the world.

True, Brande called their attention to the striking freshness of the grass, which shone with a green more vivid than that of early spring. They gladly accepted the fact at its face value, counting it as but one jewel more of the flawless day. Vera even remarked that the freshened color was but natural in the sheer transparency of the air, exclaiming how delicately the far azure of the low hills melted into the translucent sea-green of the lower skies. Surely, had Vera been fully awake, the singular beauty of that sky where it met the horizon would have recalled the warning flash which she and Cunningham had witnessed but a few hours previously. But not one of these hints, now so obvious in their significance, inspired any one of the four, though all were trained scientific observers, with more than delight that the morning was theirs in the free outdoors.

Ferguson had stayed at the laboratory, preferring

to take his rest there. Although he was too modest to admit it, he alone suspected the beauty of the day to be that of disease, not health. An item in the morning *Worker's Journal* had aroused his interest; and they left him ostensibly to amuse himself over a history of the old submarine cables. The *Journal* reported a slight disorganization of the wireless telegraph service between America and the Orient. With commendable efficiency the authorities were already testing the old cables, still kept in repair against the unexpected emergency of the wireless service becoming hopelessly jammed. No serious trouble was anticipated.

Brande failed to join the others at breakfast, telephoning at nine that he would meet them later at the links. The nervous disorder, he said, showed signs of becoming epidemic. Its appearance in America was already noted in several quarters, especially among the metal workers. The Department was co-operating with the Chinese and Russian Bureaus of Health in an effort to stamp out the threatened epidemic.

Brande's message had caused Vera some uneasiness. Should she leave her father, even for a few hours, while he possibly was a victim of the strange disorder? Reassuring her, the Chief insisted upon her taking the half holiday, and saw that she did not scamp her breakfast. Although a healthy eater, he himself scarcely touched a morsel. It was with misgivings that Vera and Alan parted from him at ten o'clock to meet MacRobert at the clubhouse.

"David might just as well have accepted our invitation to come in the car," she sighed as they shot

over the third Hudson bridge to New Jersey. "But he prefers the muggy tunnel and his precious independence."

"Yes, even at the cost of six cents."

"Which he can ill afford. Poor David! I wish he would be reasonable and accept father's offer. Then he could have at least the decencies of life."

"We all wish it. Wills, Thompson—all of us—wish that he would come into the Independent instead of hanging out on his own hook. We need him now, and we are going to need him worse in the near future. Vera, I'm afraid your father has reached the point where he must have more personal assistants than just you and me if our laboratories are to beat Jevic's."

"I know it," she admitted with a sigh. "He is only fifty-three, yet he looks sixty-five. And that brute Jevic they say is as strong as a bull. You have never seen him?"

"No. Although I have hung around Jevicville and the General Offices of Consolidated a good deal in my spare time, I have never caught a sight of him, hair or hide. It is part of his game, all this remoteness. He likes to be the great and mysterious Mr. Jevic, as inaccessible as some sacred Chinese Emperor of the Middle Ages."

"In a way he is an Emperor. Certainly he is more powerful and callous to suffering than any czar or kaiser ever was. I wonder why he has never had a picture taken?"

"Vanity, perhaps. No man is a hero to his photographer."

"That may be the reason," she admitted, "but I hardly think so. Is he really a Serb, do you suppose? Or is there anything in this canard the cheap papers are always howling at him?"

"Probably there is nothing in it, or he would either have denied or admitted its truth years ago. Besides, what difference can it make if he does have a touch of Chinese in him?"

"It might make him more civilized," Vera laughed. "The Chinese are a gentle race. If Jevic were only half Chinese he would not be one-eighth as grasping as he is."

"Then let us pray that he is a Chinaman and a half. He will need all of that to undo half the evil and misery his greed has already caused."

"Alan," she said after a thoughtful silence, "I'm going to tell you something in confidence. I am not nearly so clever as father thinks I am. No! Please don't interrupt. When mother died I was only a baby, and all of father's affection and personal ambition came to me. It may sound horrid, but I wish he had married again. When he adopted you it helped a little, but not much. You were not his own flesh and blood. He has thought too much of just me, imagining all sorts of brilliance that simply does not exist."

"But at college——"

"Oh, yes! I know I took prizes and scholarships and all the rest of it, but that means nothing in the kind of work we shall have to do before very long. Unless there is the salt of originality, the creative spark, it matters nothing how much one may know, or how

skilful one may be in using the results that others have thought out. All that sort of thing is necessary. It has to be done. And it takes brains to do it, too, but not of the best. Poor father thinks I have the best. But I haven't. I'm only a very highly trained clerk or secretary."

"Vera!" Alan protested, but she paid no heed.

"He thinks I have the true mathematical mind. Other women have had it, so why shouldn't I? Well, it is hard to say, with him for my father, and mother what she was. But I simply have not got it. I can imitate; the creation of anything really new or vital is as far above my reach as the sky. Now, tell me frankly what you think we most need at our laboratories if we are to solve the great problem? If it is to be us, and not Consolidated, that frees and controls atomic energy, and with it the happiness of the world, what must we have?"

"A first-rank mathematician with a sound training in physics. On the experimental side we can beat Consolidated to a standstill, and they know it."

"Yes," she agreed. "A first-ranker, not merely a first-class one. How many such do you suppose are living now?"

"One, certainly. Two, if you count young men with their main work still ahead of them. No more."

"The one, of course, is Jevic. We agree on that?"

"Of course. His scientific reputation is beyond dispute. Intellect has nothing to do with character in the ordinary sense, whatever some people may think. Jevic alone proves it. There are dozens of others——"

"Never mind them now. Who is the other man in the first rank?"

"You know as well as I, Vera. The people at Cambridge allowed MacRobert only ten years in which to reach the top of the ladder. Some thought he might do it in six. At any rate he has started to climb, and he's going up fast."

"So we agree on that. Now, this is what I propose. First, you didn't imagine that I ran off like this when father is so ill just to play golf, did you?"

Alan shook his head. "We all know you better than that, Vera. All the same I wondered what you had up your sleeve."

"David MacRobert," she announced triumphantly. "Now, don't think me conceited, Alan, when I tell you the plain truth. I'm twenty-four, a woman and not a fool. Now any woman who is not a fool, knows when a man is in love with her, even when he says he isn't or when he says nothing. David has been in love with me for the past six years—ever since we first met at Cambridge. And he has been feeling it worse lately."

"Then why doesn't the gowk ask you to marry him?" Alan demanded.

"Because he is too proud in his red-headed Scotch way. He won't tell me he cares for me until he has made as much money as father will insist upon giving me when I marry. Every cent that father can spare from the laboratories is being hoarded for that foolish end—of making me an heiress."

"Did MacRobert tell you this?"

"Alan! I'll box your ears. You can't be as stupid as that!"

"Honestly, Vera, I'm not trying to be humorous. But I know practically nothing of 'the way of a man with a maid'—or the other way about, whichever it is—and I was just curious. You know yourself that I have never paid any attention to girls. You are the only one who never bores me, and perhaps that is so only because you are no worse than a sister to me. As a matter of fact I think infinitely more of the Chief than I ever expect to think of any woman."

"All true, Alan, bless you!" she said. "But when you do fall, the thud will jar the stellar universe."

"Possibly. So your plan this morning is to propose to Mac, and get him into the Independent Laboratories that way?"

"Stupid! Of course it isn't."

"Then will you please stop being subtle, and tell me exactly what you do plan?"

"It is all very simple," she said, smoothing her dress. "I shall play a game of golf with David——"

"You've done that several hundred times already," Alan reminded her, "and Mac still roams the green in all his independent glory."

"Will you let me explain?"

"Go ahead," he urged, "but don't be surprised if Mac wins the game. Remember, he's Scotch, and not over-talkative."

"I wish you were David," she sighed. "Well, I mean to tell him everything that happened last night. I shall put our case plainly, showing how run-down father is,

and how we must have a first-class mathematician if we are to beat Jevic. And I shall tell him what is true; he cannot hope, within a reasonable time, to beat Consolidated single-handed. He is too poor to buy proper supplies for apparatus, and he is woefully deficient in experimental skill. He will see that mathematical genius, although essential to the victory, cannot win it alone. He needs a modern laboratory where expense is an unimportant detail that always, somehow or another, is taken care of. And we need a first rank mathematician. By this time, David's training will suggest to him to put two and two together. To decide him, I shall remind him how bravely father has worked and fought for twenty years; and how the whole scientific world, except the Consolidated interests, look to our laboratories to win the great victory that shall make the world free. Then I shall tell him outright how necessary it is that he join us. He will come this time, for he is fond of father. And I know he will not see him fail through the accident of sickness."

Alan considered a moment.

"And where does his devotion to you come in? For all you have said, I might as well play golf with Mac, and let you entertain Brande. At this moment I can think of half a dozen reasons, each as strong as any you have mentioned, why Mac should come in immediately. And once my blood gets circulating in the exercise, even better arguments will come automatically. Honestly, Vera, I'm serious. You had better let me take him round this morning, and you can amuse yourself with the Doctor. He's lots of fun if you start

him talking about golf. We simply must capture Mac, or the Independent is done for."

She was strangely silent for some minutes.

"Alan," she said at length, "I am sorry I said anything about it. You don't understand, and you never will until you meet her."

"Meet whom?"

"Your grandmother, I suppose," she smiled sarcastically.

"You are too much of a sphinx for me, Vera," retorted Cunningham. "You talk in riddles. Here we are. There's David waiting for you on the club-house porch, arguing as usual with Brande. Our friend the Doctor must have flown to beat us like this."

"Will you play, Alan?" she asked politely, stepping out.

"No, thank you, darling!" Alan replied derisively. "Three is a crowd whichever way you take it, either with Brande or me for the gooseberry. So run along, sweetheart, and propose to your dear David while I sit on Brande's chest."

"Alan," she said, longingly hefting a putter, "if you weren't so angelic about the Doctor, I'd brain you. Wait until you lose what head you have over some frilly young confection fresh from the kindergarten, and I'll get even. Ten to one she will be blonde, and as beautifully pink as a well-boiled shrimp. Oh, but it will be easy!"

"Instead of standing here prophesying you had better call off your friend David before he commits murder. Just listen to Brande!"

She clapped her hands over her ears and called sharply to MacRobert.

"David! What on earth are you saying to the Doctor to make him go on like that?"

At the sound of her voice Mac turned quickly.

"Golf," he answered with a fiendish grin.

"Then stop teasing him and come out on the green. Doctor Brande will lend you his clubs. Hurry up; we have time for just one round."

What Brande thought of this cavalier proposal did not transpire; but judging by his look as he delivered up his beautiful sticks in their spotless bag, it must have been short, with a hot point.

CHAPTER III

A Love Match

"BEASTLY game, isn't it?" began Brande with enthusiastic hatred.

"It depends upon who your partner is. Under the right circumstances even you might find it tolerable," temporized Cunningham.

Brande made no reply, moodily watching Vera and MacRobert until they disappeared over a slight undulation in the foreground.

"There he goes with her," he muttered as Mac's gorgeous head sank from view like the setting sun. "Six and a half feet of creaking bone, raw muscle and red hair."

"And brains, Doctor. Don't forget what's under that flaming thatch of his. But I'll admit Mac is not lovely to look upon. Nobody would ever mistake him for Adonis."

The Doctor inspected his own natty turnout in silence and evident distaste. His golf stockings, or perhaps his shapely calves, seemed particularly to irritate him. Then he fingered his neat Vandyke, finally stroking his well-groomed mustache. For all the world he looked exactly like a sedate ant performing its toilet.

"I wish," he murmured irrelevantly, "I knew enough mathematics to talk about them."

"That wouldn't help you with Vera, if that's what you mean. She talks shop only during work hours, and then she can't stand anyone except Ferguson within forty yards of her. When she settles down to work, the rest of us clear out. Experience has taught us that it's safer."

"Then what can she see in that hulking mathematician?"

"Possibly it is his genius that attracts her. Women, you know, have a liking for what is rare."

"Or expensive," he snapped with a viciousness that made Alan suspect the Doctor of having loved well and often but not too wisely. "But is MacRobert the genius that Miss Ferguson and her father imagine? Why, when you came up he was raving like a lunatic about the 'exact science' of golf. And he has another infallible symptom of the imperfectly balanced mind, a complete absence of the sense of humor."

"He may be half-crazy according to the man in the street. But he is no fool. How old are you, Doctor?"

"Forty-one last November," he confessed with an inquiring look.

"Well, by the time Mac is as ancient as you are, in about five years say, he will have conquered the world with that massive half-crazy brain of his. He broke with the Consolidated Power crowd with just that end in view. He is going to break them or be himself broken."

"But he has nothing! The man is as poor as a sparrow. I attended him last spring when he broke his collar bone—playing an idiotic game of Rugby with some fools from New Zealand—and I know his circumstances perfectly. Often, I fear, he has gone without proper food."

"Yes, he is as poor as a crow. But you forget that a Scot can thrive for six months on a half a sack of oatmeal and three kippered herrings. Also you overlook the fact that Mac is as proud as the devil and twice as brainy. That combination will take a lot of beating."

"But it is absurd," argued the Doctor, forgetting his own case in the hopelessness of his rival's. "Look at Consolidated Power. They have the world by the throat. I am interested in these things because we see so much of their tyranny at the Department. The working classes, even when well fed and decently clothed are half of them in misery. Consolidated owns them body and soul. It would be laughable," he went on fiercely, "if it were not a tragedy. To read all the spoutings of the orators in the histories of the Great War is more amusing than an evening at the latest farce. All that bloodshed was to wash the world clean of tyranny and set us free. Rot! Then the Socialists with their soft pudding of muddled ideas took a hand in the mess. Universal brotherhood, profit-sharing and all the rest of their rubbish were to make life decent for 'the masses' as they called themselves. Well, they got everything they wanted. And while that pack of nincompoops were stuffing their bellies and loading

their backs like pack-mules, one man stepped quietly in and took the only thing that was worth having—the monopoly of the world's brains."

"You forget the Independent," Cunningham reminded him softly. "Jevic did not corner all the brains. All men are not for sale."

"Yes, but you are one against the world. Not a car moves, not a wheel turns—outside of your laboratories—but directly or indirectly by permission of Consolidated Power. They own or have the controlling interest in every power plant in the world. A turn of the hand, the writing of a few words on a scrap of paper, and Jevic could starve the world tomorrow. Look how he has been pinching the poor Russians and Chinese the last five years. Power is so high throughout Asia and the Ukraine that the wheat growers can barely harvest their crops and get them to the markets. If Jevic felt inclined he could rot this year's harvests where they stand. And it is this sense of utter impotence that is driving the people insane. This and nothing else is responsible for the present outburst of discontent and shattered nerves throughout the world. Unless something unforeseen happens immediately to stop it, we shall have world anarchy before the month is out."

"All that is true enough. Did it never occur to you that Consolidated Power may wake up some morning to find all its machinery and vast plants so much junk, fit only for the scrap heap? That its huge establishments all over the world may suddenly—overnight,

in fact—become curiosities of a dead civilization for idle tourists to visit and gape at?"

"But how? Ferguson talks in the same strain of some wonderful scientific discovery that is to rejuvenate the world. Every cent your people earn on their patents goes to that end. You stood out like veterans when Consolidated wanted to buy your rat-proof grain tanks outright, and that alone has netted you millions. To what purpose? Suppose your people do beat Consolidated to the great discovery, how are you going to get it on the market? It won't be the first discovery or invention that Jevic has suppressed to keep his own products in the field."

"We have anticipated that," said Cunningham, his face beginning to glow with enthusiasm. "If the discovery turns out as we expect, it will never have to face competition. It will be so simple that a child can make and operate the transforming device. And we expect it to cost practically nothing, to be available in the commonest materials and in every cubic foot of air. Thompson, Vera, Wills, myself, all about the Chief, slave with but this one end in view, to smash Consolidated Power by rendering its output worthless. Except perhaps Vera. She would incidentally like to smash our dour friend MacRobert."

"Ah!" exclaimed the Doctor, his gloomy face brightening like the morning sky, "her interest in him then is professional rather than personal after all."

"No, it is both. I rather think the personal predominates in her case. She dotes on every hair in his

red head. Her hero-worship at times is little short of sickening."

The smile faded. "How long has this been going on?"

"Ever since Vera and I began trying to share Mac's honors at Cambridge."

"Why on earth did you go abroad?" the Doctor groaned. "Wasn't the University here good enough for you?"

"It wasn't that. The Chief had educated us himself, and felt that we should get away for a while to gain a little independence."

"He should be satisfied with his daughter, at any rate," Brande muttered. "I wonder that the English have any independence left after what she brought back with her. Is Ferguson satisfied?"

"Not altogether. We went abroad to finish up, and to see what one or two of the great specialists at Cambridge were up to. Ferguson expected us, at least Vera, to capture everything in sight. In ordinary years his calculations should have come out right, for he had taught Vera all his own special tricks. But there is no reckoning with genius, and the invariable rule in all lists for prizes or anything else was MacRobert first, Ferguson second. He beat her at everything she went in for. And what is worse, he seemed to take a sour delight in entering at the last moment for what she fancied."

"Just to teach her a woman's proper place," the Doctor snorted, "according to his antiquated Scotch conservatism. Trotting along at some man's heels—

that's what he believes is the whole duty of woman."

"Oh no; Mac is quite civilized. He probably thought that was the way to captivate an American girl. They still have very amusing ideas of us over there. Well, Mac's were no half-inch victories. He was always in a class by himself, miles ahead of the second best, Vera Ferguson. Only once did she crowd him. She gave him a hard tussle for the golf cup. Poor girl, she cried when he won it, like everything else."

"What a dirty trick!"

"Well, I don't know. Perhaps Mac needed the money. He spent all of his scholarships on books and apparatus. The cup was solid silver, and nearly a yard high. We heard that he sold it the next day for what it would bring as old silver."

"Canny Scot. And he never showed any real interest in Vera?"

"Not the slightest, except as his nearest competitor. And as he was so easily first in everything that mattered, what human feeling he let himself betray was precious little. I doubt if even now he cares a hang for her."

"Cunningham," said the Doctor, sitting up very straight and assuming his bedside voice, "you are fooled. From what I know of MacRobert he is not the man to wear his heart outside his vest. The more he feels the less he shows. All you have told me proves beyond the shadow of a doubt that he is beside himself with jealousy of me and infatuation for Vera."

He paused to let his great discovery percolate

through Cunningham's natural density. When it did, Alan smiled at the Doctor's simplicity.

"You are just like all physicians, Brande, helpless when it comes to seeing what ails yourself. A cold in your own head you would probably diagnose as congested leprosy."

"Then if I'm wrong, what made MacRobert, hard up as he was, follow Vera to New York?"

"If you ask a physical reason, it was because her boat sailed before his. If it is the spiritual cause you want, the angel in the case is Jevic."

"The devil! So Consolidated bought MacRobert over there. I didn't know he was that big a prize. There may be something in your genius theory after all."

"Not only bought him, but offered him a price that turned his canny head. But even at his dizziest he had scruples about hiring out his brains to such a concern. He held off for three days. The Consolidated agent clinched the bargain by throwing in a first-class passage on the most luxurious hotel afloat, the new *Vanadia*. The immediate prospect of four gorgeous meals a day for three consecutive days was too much for Mac in his porridge and fried herring condition. He succumbed ignobly."

"Sold his birthright for a mess of pottage? I should never have thought it of David MacRobert."

"Nor should any of us. Mac himself says now that it was the greatest tragedy of his life. He was seasick all the way over, subsisting entirely on soda crackers and diluted orange juice."

"Ha, ha!" laughed Brande, sourly. "Served him right. I wish I had been aboard to doctor him."

"It would have been worth double anyone's passage money. They got him to his feet just in time to salute the Statue of Liberty. Then to the joy of everybody on deck he went after the purser and tried to collect the price of a dozen meals less fifteen oranges and five pounds of what he persisted in calling 'biscuits'."

"Still I am not convinced. If he came over here for money alone, why did he throw up his position?"

"Doctor, you are positively blind with jealousy. Mac chucked his job because he has a fine sense of professional ethics. You can appreciate what that means!"

"Of course. Although I fail to see how ethics could enter into MacRobert's profession."

"Very simply. Consolidated Power has debauched the profession of scientific research. For a generation their agents have kept close watch on every school, university and manufacturing plant in the world for investigators of promise. When they find some brilliant young fellow they buy him outright with double the salary he could get elsewhere. In the case of an older man who has stood off for a few years, the Corporation makes a cold-blooded investigation of his hopes and personal ambitions. Then it offers him the chance of gratifying his desires, and the man is bought. Professor Werner of Chicago is an example. Incorruptible where money is concerned, he sold himself body and soul for the opportunity of pursuing his researches in peace."

"But what does Consolidated get out of such a contract?"

"Frequently nothing. It takes a chance, suppressing discoveries until their money value appears,—often long after the investigator is dead and paid in full. In Werner's case the mere by-products of his work have netted the Corporation millions."

"And they offered MacRobert such a chance?"

"Exactly. And Mac was scientist enough, when he found out what Consolidated is, to throw up seventy-five thousand a year. It took him less than a week to find out the game the Corporation is playing. He quit at once. He even refused the three months' salary which Jevic offered him, and to which, I believe, he had a legal right under the terms of his contract."

"They parted enemies, then?"

"Not outwardly. Jevic is too shrewd ever to antagonize a man beyond all hope of reconciliation. The Chief is the one exception. He and Jevic have not exchanged a word in twenty years."

"I admire Ferguson's grit in standing up to Consolidated. And," he added grudgingly, "I suppose one must also admire MacRobert's independence. He too, I suppose, is after the great problem?"

"Of course. It is the one chance he or anybody else has of downing Consolidated."

"And you back him to solve it by himself within five years?" asked the doctor incredulously.

"Not by himself. He lacks first-class mechanical ingenuity. Mac is a bungler with his great hairy paws. For success he must have a sort of combined tinker,

blacksmith and watchmaker to rig up his apparatus."

"And how is he to get such a marvel? He has no money. The wretched odd calculating jobs he does for the astronomical observatories and a few gambling stock brokers barely keep him in necessities."

It was unnecessary for Cunningham to reply, for Vera and MacRobert had reappeared over the crest of the hill. They came swinging toward the two men, flushed and happy from their vigorous exercise. The Doctor followed Cunningham's glance.

"Mac will soon be allied with the Independent Laboratories," Alan said. "After that he will command the world's highest experimental ingenuity. Consolidated's best can't hold a candle to some of our men on the experimental side."

The Doctor groaned. "Confound his luck! Why didn't my father make me take up tinkering instead of bone-sawing? Then I could have lived a really useful life in your shop."

"David beat me shamefully," Vera cried. But she seemed to have enjoyed the experience.

"You seem to relish his brutality," remarked Brande, glaring at Mac.

"Didn't you get a chance to—" Cunningham began, then hesitated.

"Alan!" she said, with a dangerous glint in her eye, "hurry up with the machine. David is coming back with us, as he wishes to finish up some work this afternoon. Hurry! We've overstayed our leave half an hour already."

"Aren't you going to sit in the back with him?"

Alan asked as she began climbing into the seat beside him.

"No," she answered shortly. "He wants the Doctor's opinion on one or two plays he made."

"Then you had better put your hands over your ears now," Alan advised as he started the machine with a deep, comforting roar.

CHAPTER IV

An Unexpected Visitor

MAC ROBERT left them at the door. "I'll not come in, thank you, Vera," he said. "I have wind that our savage friend Jevic is planning a coup, and it's up to me to knock his props from under him."

Vera looked strangely disturbed. "Has it anything to do with what happened to father last night?" she faltered.

"It is too early to make any guess of that kind, Vera," he replied, moving off. "We shall be better able to judge by what happens in the next few days. Watch the wheat market. Well, good bye! I must work like a beaver all day if Jevic isn't to come out top dog. So long, Alan. Good-bye, Doctor Brande; I enjoyed your remarks on that play at the fourth immensely."

Brande favored the brawny young giant with a sour smile and a cordial farewell.

"May I come in for a moment, Miss Ferguson? They won't need me at the Department today till four."

"Of course, Doctor Brande! How silly of you to ask. We shall have lunch about two, and will be de-

lighted to have you stay. I took it for granted that you would do so. You can talk to father and see if he is still improving."

The prospect of a quiet chat with father seemed scarcely to inflame the little doctor. However, he followed Vera humbly enough.

"Listen!" she said, pausing outside the conservatory door. "Father has a visitor with a bellow like a bull. Who can it be, do you suppose?"

"We can soon find out," Alan said, opening the door.

Opposite the Chief, in the shadow of a Californian palm, a huge, swarthy man was reclining in the largest wicker chair, which he filled to overflowing. Observing Vera in the doorway, he rose mountainously and bowed.

"Your daughter, Ferguson, I see," he said, extending a hand that glittered with rings. The Chief rose.

"This is my old teacher, Mr. Boris Jevic," he said, introducing Vera and Alan to the colossus. "He very graciously called to see how I am."

"Yes, I saw in this morning's *Scientific Bulletin* that my old friend and former pupil here had suffered a sudden stroke. With this strange epidemic sweeping the world I feared to find him prostrated. I am happy to see with my own eyes that the report was grossly exaggerated."

"So are we," Vera assured him. "Won't you sit down? Thank you, Mr. Jevic, I shall take this bench."

They settled down to inspect their enemy as covertly as possible. Physically he was a giant. The play of

great muscles on his shoulders and arms followed his slight, unconscious movements like the rippling of water. From the huge trunk his massive neck rose firmly up like a tower of strength, supporting the great black head in perfect balance. His enormous but shapely hands, encrusted with heavily jewelled rings on every finger and both thumbs, gripped the arms of his chair involuntarily as by the habit of unconquerable brute strength. From the light tan shoes and checked gray tweeds, to the scarlet necktie with its smouldering ruby the size of a robin's egg, his attire would have branded any ordinary man as impossible; but this giant was not of the herd. Barbarous he might be in dress and personal appearance, yet he was neither commonplace nor vulgar. The very crudities of his apparel but emphasized his distinction.

His strong face was that of a man in the prime of life, the cheeks full, firm, and ruddy under their dark olive tan, and the lines about the mouth those of strength and the habit of command rather than of undistinguished middle age. His strangely foreign countenance, despite the wiry, jet black short mustache, gave the queer impression that this virile giant could not grow a beard. His cheeks were smooth, but whether unshaven or well barbered it was impossible to decide. Presently his deep, slightly guttural accents jarred them to a sense of their rudeness.

"You find me interesting, Mr. Cunningham?"

Cunningham was so taken aback that he could only blurt out the plain truth.

"Exceedingly, Mr. Jevic. If all the world did not

know it to be a fact that you are past seventy, I should have set you down for a professional strong man of less than forty."

"I am a strong man," he said, greatly pleased, "although not a professional weight lifter. You, I presume," he continued, turning to Brande, "are the Doctor Brande of the Public Health Department?"

Brande admitted the fact. Jevic beamed on him.

"I have heard of your fine work with the Department," he said, "especially the welfare activities among our employees. Now, Doctor, as a medical man, what would you guess my age to be?"

"About forty," answered the Doctor after a brief inspection which included Jevic's thick, blue-black hair and gleaming, unspectacled eyes.

"Good!" Jevic exclaimed. "I feel just about forty. But add thirty-nine to that, and you will have my present age. And I never wore glasses in my life."

He favoured the company with a satirical glare of his large black eyes in which barely a rim of white showed round the irises.

"Strange, isn't it," he went on with a malicious glance at the Chief's careworn face and all but white hair, "strange, how well some of us keep our youth?"

"It is," Brande agreed readily. "But on the whole the usual order is better, I think. How intensely disagreeable it must be never to outlive the crudities of our early twenties, never to forget the idiotic hopes and futile enmities of our cabbage days! For your memory, I take it, is no less vigorous than your body?"

Brande, perhaps unintentionally, had registered a hit. Jevic's broad, high forehead, his one intellectual feature except his eyes, became convulsed in a set and knotted frown.

"You are partly right," he admitted, "although you are mistaken as to the advantages of forgetting. But for the vivid memory of my early days in this country I should have been dead a quarter of a century ago! I have lived hard. Never have I done less than the work of five strong men. And it is memory, that alone, which has kept me young and vigorous in mind and body!"

He leaned back, breathing hard with repressed excitement. The large wicker chair creaked ominously. Vera tactfully changed the subject.

"Do you ever lecture at the University now?"

"No, Miss Ferguson. I discontinued my weekly lectures twenty years ago. Since President Ballard died I have never been invited to resume my course."

"I wonder why?" Vera asked innocently.

"I have never troubled to inquire," he answered testily. "Perhaps the new regents think my views on certain matters unsuited to the green mind. Whatever the reason, I have never been asked to speak either to students or faculty since Ballard died."

He paused reflectively, and Vera prompted him to continue. She seemed to be drawing him out for some purpose of her own.

"You must have given your last lecture just about the time that father left the University. I wonder if he heard it?"

Jevic laughed. "Your father, if I remember correctly, left my lecture room in a stamping rage a week before I did. So he missed the last lecture, which, as I remember, was the crown of the series. Not one of the auditors understood a single sentence of it! If your father had done me the honor to stay, I am sure he would have followed my remarks with the sharpest interest."

"I disliked your remarks about humanity at large as opposed to our particular guild of scientific workers," said Ferguson evenly. "And your forecast of what the man who controlled atomic energy might do to the world if he chose to abuse his power, decided me in a hurry. I saw that you were no fit man to discover the great secret, and I left your lecture room that hour to find someone who was. I have been looking ever since. These laboratories are the tangible results of my search."

"You should have stayed to hear the course out, Ferguson," Jevic replied with a good-humored laugh. "The last lecture might have given a man of your ability a few invaluable hints."

"What was that wonderful last lecture about, Mr. Jevic?" asked Vera interestedly. "I'm sure it must have been brilliant. Father says you shone like a star even at your dullest."

"It was the best lecture I ever delivered, Miss Ferguson," Jevic answered with a flash of pride, rising readily to Vera's bait. "In it I summed up all my researches on the internal structure of the electron, the ultimate nature of electricity, and the connection of

these with the mysterious green line in the spectra of nebulae."

"How interesting!" Vera exclaimed, clasping her hands. "Do go on! I should like so much to hear what you think causes that strange green line in the nebular spectra."

"Why, that's well known, Miss Ferguson," Brande informed her with a rashly superior air. "They taught me that when I was a freshman in high school. There's some element or substance in the stars that make up the nebulae which has never yet been found on earth. The light from nebulae shows the existence of this element by a beautiful green line when they break up the light-ray by means of a prism or some such arrangement."

"A spectroscope, Doctor," said Jevic with deadly politeness.

"Yes, that's the thing! And isn't it true, Mr. Jevic, that they call this unknown element nebulium, after the nebulae in which they suspect it exists?"

"Undoubtedly, Doctor Brande."

"And that the same peculiar green line occurs in the light from no other objects? Well, if all this is so, where's the difficulty? It is only a matter of time and patience until they discover the actual element nebulium in some rare mineral on earth. Look at helium, for instance. They found that in the Sun first, didn't they, by pretty much the same method? The spectrum of sunlight showed a certain yellow line, and then several years later a Scotch chemist found minute quantities of the indicated element in the air.

It was very costly when they first identified it on earth; but in a few years they were manufacturing it for practically nothing. Why, it was the gas, wasn't it, that they finally used for inflating dirigibles in the Great War? And all this came from one man's curiosity about what the Sun is made of. I hope nebulium, when they find it, won't be used in another war!"

"An excellent summary," said Jevic with caustic irony. "By the way, Doctor, were you through the Great War?"

"The Great War? I wasn't born till thirty years after it was all over! Why?"

"Oh, nothing," Jevic answered with a malicious smile. "I merely wondered who pumped you full of helium gas."

The wretched Brande collapsed like a punctured toy balloon. The Chief came hastily to his rescue.

"Everything you have said, Brande, is true in a broad way, and close enough for general purposes. What Vera meant, however, was something slightly different. Like all of us, she is eager to find out whether the green nebulium line is due to incandescent matter of some sort as we know it, or to something half way between matter and energy—like those queer sub-electrical particles everybody was investigating a few decades ago. Nebulium still remains a mystery. Can it be found or produced on this earth? Or must we duplicate the conditions existing in nebulae and among the stars generally before we can hope to discover the origin of the green line?"

The Chief paused, lit a cigarette, and glanced casually at Jevic.

"Mr. Jevic and I were discussing the question," he continued, "when you came in. He is of the opinion that whoever gives a complete answer to this puzzle will also solve the infinitely practical problem of releasing the vast stores of energy at present locked up uselessly in the atoms of all matter."

Brande expressed his gratitude with a look.

"And as for the last problem," he said, "I understand from Cunningham that whoever solves it may get his fingers badly burned. The atom seems to be a sort of Pandora's box—full of good things if you know how to get them back into the atom again when you have had enough of their goodness."

"An apt illustration, Doctor," said Jevic cordially. "Pardon my late rudeness; but no one who has ever been a professional lecturer likes to hear another man making away with his thunder. To come back to the atom, another illustration of its possibilities is that brass bottle we used to read about in the *Arabian Nights*. You remember? It had Solomon's seal on the stopper, and the inquisitive fisherman—who, by the way, was a true scientist—was not happy until he had the seal off and the cork out. Whether he was happy or the reverse afterwards, I forget. All I remember is a picture of a fascinating devil, or genie, the size of a tremendous thunder-cloud, tapering up from the neck of the bottle, and the flabbergasted fisherman pressing his hands against his lean stomach.

Perhaps the sight made him sick. Now it may be like that when we get the seal off the atom."

"Yes," said Ferguson, taking up the fable, "it may be like that. The big devil will be enormously strong, and if only we can civilize him and convert him to the gospel of hard work, we shall make him spin the wheels of the world for us. The effort will hardly make him pant. There is always the danger, though, that he may turn out to be a very anarchistic sort of demon, refusing either to work or go quietly back to his atom. In which case we shall have to pay him whatever price he names to leave us in peace."

"And about the bottle and its ingenious stopper," said Jevic, "we don't know and can't guess whose seal is on it. That is what makes it so difficult to get the thing open. But as a random shot, I should say it will take the combined wisdom of a dozen Solomons to break that mysterious seal on the atom. I count myself good for six of the Solomons," he concluded with a laugh; "and my old friend and former pupil, James Ferguson, for the other half dozen. The two of us putting our wits together should crack that seal and get at what is in the bottle. And from the way we have been rehearsing for the past twenty years, we should be able to do the trick within three months from now."

"Thank you!" said the Chief with faint sarcasm. "Do you know, I always estimated you at seven Solomons, and myself at something less than four and a half? So we should still fail by about half a Solomon to break into the bottle, I'm afraid."

"You forget David and me," Vera said demurely. "MacRobert is good for the other half Solomon, and I'm sure I could manage the two thousand wives, or whatever the number was. So the family will be complete. I hope it will also be happy. But seriously, Mr. Jevic, I suppose father told you about what Alan and I saw last night? The green flash, I mean."

"He did, Miss Ferguson; also about your interesting comparison. That started our discussion. Of course you know that nebulium, whatever it may be, will not necessarily give a green flame just because its line in the spectrum is that color?"

"Of course," Vera assented, and Brande loudly echoed her.

"Neverthless," Jevic continued, "I find your suggestion one of great interest. It happens that certain calculations which I made some time ago, and which I re-examined lately for the first time in a year, indicate an approaching crisis in the heavens."

"Of what sort?" Ferguson demanded sharply.

"It is impossible at present to say definitely. I have not carried my calculations sufficiently far to venture a scientific opinion. The initial value of an essential arbitrary constant still eludes me. It may be that the delicate balance which for ages has preserved the appearance of the heavens roughly as it is now, is about to be upset and readjusted, with what consequences we cannot foresee. Nevertheless, I am confident, in spite of that elusive arbitrary constant, that my calculations will evolve the answer to this and even greater riddles within a few days."

"Of themselves?" Alan hazarded with a smile at his somewhat pompous tones.

"Of themselves, Mr. Cunningham. My symbols work incessantly while I dream."

"Rather a strange theory, that, for a hard-headed mathematician," remarked Alan once more. "What would your young friend MacRobert think of it?"

"He would call it nonsense," answered Jevic. "But if young MacRobert lives as long and works as hard as I have done, he will have the truth forced on him whether he believes it or not. I but put together the various laws of nature in certain ways, tracing their shadows on my papers. The outcome is independent of my will. It is conceivable that a blunder on my part might inaugurate a disaster that would wreck the universe. For my symbols, I tell you, live and move and create!"

He had leapt to his feet, and now stood towering over them, his black eyes outflashing the gems on his clenched hands. Brande stirred uneasily in his chair and gave the giant's tense face a searching look. Cunningham too had an uneasy feeling that Jevic's great mind was unbalanced, that on the subject of his mathematical researches he was a monomaniac. That a mind of his undisputed pre-eminence could credit the rubbish he was talking, passed comprehension.

"I repeat," he almost shouted, "that my calculations work independently of me. All my part in them is but to catch a faint gleam of what they are preparing for the future of the universe! My brain is but the blind

agent of everlasting laws that shall dominate the stars when I am a handful of ashes."

"Won't you sit down, Mr. Jevic?" Vera suggested sweetly. "You know you are talking rank mysticism."

"And what if I am?" he retorted, all but flattening the best wicker chair. "The giants of the past—the men on whose shoulders we stand today looking out over the unknown—were many of them mystics of the first water. How about your great countryman, Simon Newcomb? President, in his time, of the Society for Psychical Research. What about that great old chemist, Sir William Crookes? A confirmed spook-hunter! And Julius Argand? A telepathist, and a pioneer to the true explanation of what once was ranker mysticism than mine. Even the incomparable Poincaré himself does not escape the taint—as you seem to call it. Though he would have been the last to admit the fact, his queer philosophical writings on scientific method and the workings of the scientific mind are a jumble of crude mysticism and penetrating guesses. But in his time he passed for the type of all that is logical, intuitive and rigorous in science.

"I have lived three times as long as you, Miss Ferguson, and I have not been idle. Let me give you this to remember: Ideas are living agents, and they rule the universe. We are the machines, the mere tools of what we presumptuously call our own thoughts. An evil thought may overmaster us, but if so, our servitude is not of our willing."

"Thank you," said Vera. "I shall remember. Is

that how you account to your conscience for your own evil thought?"

"What evil thought, Miss Ferguson?"

"That you shall one day be the last despot of the world, more tyrannical than any czar, king or kaiser of the world's insane history ever was? That a lust for absolute power over the lives of all the wretches on this earth is a virtue to be nursed and fed? If so, yours is a comfortable philosophy."

"You do not understand! My lust, as you miscall it, for world power springs from an impersonal desire to right a wrong which human beings should have made impossible generations ago!"

"And what may that be?" asked Vera.

"The persistent, wilful obstruction of all progress."

"By whom?"

"All! Leaders and followers alike."

"Then by you too, perhaps?"

"It is possible," he admitted, seeing himself cornered.

"But you scarcely think so. No, Mr. Jevic, you shall have to do better than that to convince me. Come, won't you tell us what cursed you with this antique lust for power? What made you the one black sheep in the happy family of science? Without this itch for despotic power you would be so great; with it you are one half what you might be. A step farther along your mistaken path, and you may even find yourself in the rogues' gallery of history, in company with all the other great statesmen whose incompetence and greed

it has taken science decades to obliterate. Tell us the whole story, won't you? It will do you good to confess."

Jevic looked sullenly at her, but made no reply, and she continued.

"Never mind how absurd your motives may sound when you must reduce them to words; we shan't laugh. Shall I tell you my motive for working so hard? It will make your own, perhaps, seem less mean and commonplace. I slave so that I may play the harder. Outdoor sport is what I would live for if I were rich and unpestered by a miserable conscience that won't let my brain go to sleep. Now what keeps you going? It can't be the mere lust after absolute power, for you are clever enough to know that you won't like it when you get it—if ever you do."

He sat silent for several moments, thinking. The nature of his thoughts was apparently not all pleasant, for he frowned, and his face lost some of its youthfulness.

"I will tell you briefly the whole story," he said, "and then you shall judge for yourself."

"Pardon me," Brande interrupted, rising, "but my telephone just clicked."

He took the neat silver box from an inner pocket and threw the switch. "It is nothing private, I presume," he said, "so I need not retire. Your talking will not bother me; please go on."

"I'll wait, Doctor," said Jevic courteously, "until you take the message."

The instrument began to speak. "Department of Public Health calling Doctor Brande. Take the message, take the message, take——"

Brande shoved over the key, and the message came through in a crisp, clear voice.

"Doctor Brande will report at once to the Physician General at his office for consultation. Unknown disease attacking metal workers throughout the world. Appearance: universal and explosive. Symptoms: blisters on body, particularly on hands and face, similar to those caused by emanations from the radioactive metals. The sufferers display great physical uneasiness, high nervous tension and acute mental distress. Report at once."

Brande snapped off the communicator and thrust the instrument into his pocket.

"Sorry to miss your story, Mr. Jevic. Take care of yourself; I fancied you showed symptoms a few minutes ago of the nervous disorder which seems to have been the prelude to this new outburst. How about the lead-actinite fabric, Ferguson? Is it ray-proof?"

"Against all known rays, yes. Try it out; a good suggestion."

"I shall. Probably this sounds worse than it is. We had a scare six months ago that came to nothing. The thing disappeared of itself in a few hours. Well, I'm off."

He took his hat, and ran.

Vera looked after him uneasily. "Do you suppose last night's flare-up has anything to do with this?"

"It is too soon to form a theory," Ferguson answered, narrowly watching Jevic whose mildly interested expression never changed. "We can do nothing until we hear more definite accounts. What do you think, Jevic?"

"I agree. It is always a waste of time beginning work on insufficient data. Personally, I am not alarmed."

"Not even about your own health, Mr. Jevic?" Alan asked, trying to draw a spark. "Doctor Brande seemed to think the disease had got you."

"Bah! I'm as strong as I ever was. And my mind is as clear as a mountain spring. I am alarmed neither for the health of the world nor for my own."

"Then neither are we!" Vera said. "Mr. Jevic, let us have your story—or confession. It may give us a clue to so many things about you," she added significantly, "that I'm sure we shall be using our time wisely in listening. And you promised, you remember, to tell us everything."

"And I always keep my promises, Miss Ferguson," Jevic replied with a touch of pride. "Even to my enemies!"

CHAPTER V

The Man in the Red Shirt

I AM seventy-nine years old," Jevic began, "although anywhere I might pass myself off for forty. You have asked me, Miss Ferguson, why I am cursed, as you call it, with a lust for power. I will tell you. Probably you will not credit my motives. For unless you have smarted under the same stings that I have, you cannot put yourself in my place."

"We shall make allowances," the Chief murmured. "Go on; I have always wished to understand what kind of man you are at heart."

Jevic rose, and while he narrated the story of his early struggles in America, paced restlessly back and forth in front of them. For the most part he avoided their eyes while speaking.

"Fifty-one years ago I landed here in New York, an immigrant in the Serbian quota, with just sufficient money in my pockets to pass the inspectors at Ellis Island. I wore top boots, blue dungarees tucked into their flaps, and a coarse red flannel shirt. I had neither hat nor coat. My last money had gone to pay my passage from Serbia, and to provide the immigrant's toll.

"Being twenty-eight years of age, strong and well-

built, and having a passable knowledge of English which I had acquired as a boy in my Serbian high school, I had no difficulty in obtaining work."

He paused for a moment, continuing with a sarcastic smile.

"In fact before I had left the sheds at the island, no fewer than eight employers of common labor had offered me jobs. One of these I accepted, for I wished to save my hoard against a rainy day. That was a wise provision in the old law which demanded that every immigrant have a reserve in cash before entering the country. The immigrants' toll saved many a hopeless wretch from suicide. Well, I left the island engaged at three dollars a day to dig sewers."

For some moments he paced back and forth, frowning, before he resumed his narrative. His face set in deep, bitter lines. Evidently as he once more resumed his tale, the memory of his early hardships lived with him again.

"I do not blame the man who offered me the job. An ignorant, money-making contractor, and a slave-driver by nature, he saw in me only another damned ox of a foreigner to sweat for him in his filthy ditches. Had I told him that I possessed a knowledge of mathematical physics unequalled by any man of my age in the world, he would only have sneered that knowledge is cheap and a poor money-maker. He asked nothing about what I had been doing in my native country. If the fool had, I should have saved him money, in his crass, incompetent, muddling mismanagement of every trivial problem he met. That

I, a Serbian immigrant, spoke English, might have opened his eyes if he had possessed the least spark of intelligence. But the man was nothing more than a sewer-digging money-maker, whose proudest brags were that he could hire what brains he needed in his business, and that men were the cheapest commodity in which he dealt.

"Working alongside of me were several young men, foreigners like myself, who were putting themselves through school. These he persecuted and abused with all the obscenity of his vile tongue. Sometimes he would lecture them on his own uneducated greatness. Education beyond bookkeeping and the hand-book engineer's ability to read a blue-print was the constant object of his loud-mouthed and blasphemous contempt. That most students are poor was to him a proof of their worthlessness. It never dawned on him that within a few years these contemptible wretches would be owning him and his kind, body and soul, and that sheerly by their hard-won education and human intelligence.

"As for me, I was the favorite butt of his obscenities. To him I was a human ox, stupider even than the sweating students. With one other, a young Englishman, I shared the choicest of his oaths. I dwell upon this episode of my life because in a way it determined my future career. Had that young Englishman not been gifted with silence when silence was the one proper eloquence, Consolidated Power would not today be what it is. His name was John Courthorpe.

The Chief started. "What! surely not the Courthorpe who died about ten years ago? The man who helped you with the telephotoscope?"

"The same man. But I anticipate. I soon found out that I had been swindled. The wages barely kept me in food and lodging in the city. Decent clothes to enable me to hunt for work in measure with my education, were out of the question."

"Why didn't you spend some of your reserve," asked Vera, "to buy yourself a suit of clothes?"

Jevic bit his lip, and a dull flush crept up his massive neck, spreading like slow fire beneath his dark skin.

"You may as well know everything," he said sullenly. "This is the first time, and I promise you it shall be the last that I have ever talked intimately to any human being about my personal affairs. Five dollars of my reserve went for a book. My drudgery in the ditch left me dead-beat and homesick. One day, when passing a secondhand bookstall on the way to my lodging, I saw the familiar brown volume of Jovanovitch's poems in the fifty cent box. I thought that I could afford it. When I went in to buy, the thieving shopkeeper seeing my eagerness, lied, declaring that the price mark was a clerk's mistake for five dollars. I paid. But as I left the shop, I turned back and promised to put that liar through bankruptcy within five years."

Jevic laughed. "I kept my promise. The man was ruined and a beggar exactly four years, three months and five days after he had robbed me.

"That was the beginning of my hatred for the merchant class. If these swindlers took pleasure and profit from the inexperience of men who could not help themselves, why then, I said, I should make their whole class sweat for my own pleasure and profit. I do not make war on the man who works with his brain or his hands," he exclaimed fiercely, "only on the parasites who live by buying and selling."

"Of whom you are one, in a very large way," Vera murmured.

"That's all very well, Jevic," the Chief interposed quietly; "but it can't be done. Fight one vital section of society, and you war on all. The buyers and sellers are as essential as the diggers and inventors. You cannot draw a line, and say above this all is necessary, below it, superfluous."

"I deny it! You never——"

"Please go on with your story, Mr. Jevic," said Vera. "So far you have accounted for only five dollars of your reserve. Surely you had more than that?"

"Yes," he admitted reluctantly, the flush again spreading slowly up his neck and over his face, "much more."

"Then why didn't you buy a decent suit and look for better employment?"

"Because, Miss Ferguson, like a fool I had parted with the rest of my reserve."

"More books?" Cunningham asked.

"No. There was a fellow-countryman in the steerage with me, who was bringing his wife and four children to this country to seek their fortunes. The wife

was helplessly seasick most of the voyage, and when we reached New York she was dangerously ill. The husband found work in the same ditch as myself. He also found the wages insufficient to procure medicines and proper food for his wife. After spending his last dollar he appealed to me. They had taken his wife to the hospital at the poor farm.

"I went with him and saw the place. It is a pity that pictures of the farm fifty years ago have not been kept. Our friend from the Health Department would be interested. Such filth we would not tolerate for decent animals in our days. There was nothing for it but to give up my reserve and get the woman to a clean bed."

"Did she get better?"

"In a few weeks, Miss Ferguson."

"And the husband," Cunningham asked; "what did you do for him?"

"He soon found good work outside the city. He was a man of some business ability and an expert truck-gardener. Later he became my first manager in a minor concern that went out of business thirty years ago, the Jevic Construction Company. He manufactured a cheap and improved digging tractor—a tangible reminiscence of my days in the ditch, I suppose!—and contracted for nothing but the biggest city jobs."

"All that doesn't sound much like war on the merchant class," remarked the Chief. "When did you continue the fight?"

"Continue it?" he snapped. "I have never

abandoned the one constant purpose of my life. Notice my tactics," he said with a cynical smile, "and you will see the battle. Always I absorb. One after another small industries are swallowed up in larger, the larger in yet larger, until finally Consolidated Power swallows the whole. As each industry goes down, a whole class of traders, not an insignificant thousand or ten thousand, goes to the wall. Within six months from now there will be but a single trader in the world, the Consolidated Power Company. Then we shall sell everything, from bread to buttons, at our own price."

"When you get the seal off Solomon's bottle," said Vera, "not before. Please go on with your story."

"Soon I could stand the brute life in the ditch no longer. I asked the walking boss if he knew where I could get something to do that would give me a chance to use my head. Of course I was a fool for approaching him. He gave me my time and told me to go to hell.

"It was Friday, and I had fifteen dollars coming. At the pay shack they docked me two dollars for an employment fee which, according to the clerk, should have been paid when I got the job.

"Before leaving I spoke to one of the students in the ditch, asking him about the University. Like a good fellow he gave me a lot of pointers. Incidentally he dropped the information that the professor of mathematical physics had died about a month previously, and that his chair was not yet filled. I thanked the young fellow, and told him that I was going to

apply for the vacant chair. He stared, but being a born gentleman, kept his thoughts to himself. For that discretion he later became my chief laboratory director at a hundred and fifty thousand dollars a year. He was a first-class administrator, and when I employed him he had already developed a genius for practical mechanics. He was worth every cent of his salary, although he always protested that I paid him too highly. It was largely his mechanical ingenuity that made the telephotoscope practical."

"So that's how you got hold of Courthorpe," murmured the Chief. "I have often wondered what you two could have in common. He always spoke so highly of you; and just a year before his death refused double his salary to come over to us."

"Yes," said Jevic, evidently pleased, "Courthorpe was grateful. He never forgot that I paid him what he was worth when no university could have given him more than twelve hundred.

"Well, I acted at once on Courthorpe's unconscious hint."

"In your red shirt, Mr. Jevic?" Vera inquired.

"In my red shirt, top boots and blue dungarees. I dared not wait until I had earned sufficient to buy decent clothes, for by that time the position might be filled. On Saturday morning I bought a new but out of style derby hat for a dollar in a slop-shop, and went at once to the university.

"I asked to see the President of the institution. That was in the Secretary's office. The young woman whom I asked glanced up from her typewriter, looked

me over, and told me the janitor's office was in the basement of the main library. I persisted in my demand to see the President, and my voice rose. The Secretary came out from his inner office and inquired the cause of the disturbance."

"I should have loved being there," said Vera. "Just think of how distressed that Secretary must have been at your red shirt! Brains, of course, never enter the calculations of such people."

"You would have enjoyed it, I'm sure, Miss Ferguson. I did myself, until I lost my temper. The Secretary was a slim, dapper man with a little lip-beard like a French poodle's and a mincing sense of his own importance.

" 'You must leave quietly, my man,' he said, 'or we shall have to call the watchman. If you wish work, apply at the head janitor's office in the basement of the main library.'

" 'I wish to see the President,' I said, 'and I shall be obliged if you will tell me when I may have ten minutes of his time.'

" 'President Ballard has nothing to do with the employing of the laborers in this institution,' he replied. 'That matter is entirely in the hands of Mr. Butler, the head janitor. You will be well advised to address your inquiry to him personally.'

"He turned to re-enter his private office. In one stride I had him by the nape of the neck.

" 'Will you make me an appointment with President Ballard?' I asked as quietly as I could.

"The miserable lackey at once acquiesced. I let him

go. In my simplicity I did not suspect him of temporizing. He tripped over to one of the stenographers' desks, and pressed a button twice.

" 'You wish an appointment to some position in the University?'

" 'Yes. To the chair of mathematical physics, which I understand is still vacant.'

" 'What are your qualifications?'

"I told him. And I emphasized my willingness to convince any board of experts that the University might appoint of my competence to fill the chair.

" 'Very well,' he said, 'we shall see presently.' He beckoned to someone behind my back. Turning round, I walked slap into the arms of two burly watchmen."

Jevic paused in his restless march, threw back his head, and shouted with thunderous laughter.

"They made short work of me. I protested to the Secretary that I would take any examination they chose to give me, and pass it with credit to myself and the University. He smirked, and replied that I might soon have a chance to show what I could do in an examination.

" 'Where?' I shouted. 'Take me there at once!'

" 'Before the lunacy commission!'

"Every twenty-five cents an hour stenographer in the place threw back her head and cackled. It was the last straw.

" 'You damned blonde, gum-chewing, writing machines,' I bellowed, 'you would cackle if Sir Isaac Newton himself asked you for a glass of water!' "

"Well," Cunningham remarked as Jevic subsided

for an instant, "you must admit that you deserved chucking-out for such an uncalled-for insult as that?"

"I did," he admitted, rising and resuming his quick march. "No sooner were the words past my lips than I regretted them. The stenographers were in no way to blame, and I had no business insulting them. Later I came to respect them all as highly efficient in their chosen profession. But at the time I saw red.

"The watchmen were too much for me. They were scientists where I was but an amateur. After a brief but hard tussle they bested me, and I found myself outside, shooting down the granite steps to the sidewalk. My hat fell off, and I heard the two watchmen roaring with laughter.

"Landing on the sidewalk I lay for perhaps half a minute, stunned. Slowly I got to my feet, and looked back. With several others the Secretary had come out to view the sport. He stood at the top of the long flight of steps, leaning against one of the Doric columns giggling like a girl. One of the watchmen walked down a few steps, took up my hat, and pitched it after me. It rolled in the gutter. I picked it up, brushed it off, and ramming it down on my head, started to walk away.

"Then rage got the better of me. I turned back and shook my fist at the small crowd still laughing from the portico.

" 'You brainless hangers-on and overdressed idiots,' I shouted, 'you can throw me out, but you can't keep me out. I shall be back again tomorrow, and the day

after, and every day until this University begs me to take a chair in it at ten thousand dollars a year!' "

"You returned, of course?" the Chief asked.

"The next day, as I had promised. Overnight the papers had got hold of the incident. Its 'human interest' appealed to them, and they spread themselves in a frowsy banquet of cheap wit, mild sarcasm and ill-drawn cartoons. The red shirt, particularly, roused their sense of humor. 'The lightning calculator in the red shirt made a lightning descent to the sidewalk'. 'The University refused to employ the learned professor only because it feared his mathematics might be as anarchistic as his shirt.' And so on.

"I read the paper at the lunch counter while I ate my dry bread and drank my black coffee. The proprietor recognized me from the description, and he too seemed to find me amusing.

" 'Do you sell candy?' I asked him.

" 'Yes; we have some excellent chocolates at fifty cents a pound, or in boxes at from one to three dollars. Would you like a chocolate cream to rub on one of the sore spots?'

" 'I want a three dollar box,' I told him, 'to heal one sore spot. That ought to be enough. Also give me one of your mildest twenty-five cent cigars.' Eyeing me inquisitively he wrapped up the candy and selected a cigar from a fresh box. Taking the parcel, and putting the cigar inside my hat to keep it from being broken, I left the place and started toward the University.

"They were evidently expecting me, for besides three watchmen there were several respectably dressed loafers, among them one or two carrion crows from the press looking for more 'human interest.' Passing the crowd without interference, I walked directly into the Secretary's office, and accosted the young woman at the first desk.

" 'Please share these with the rest of the girls,' I said, giving her the box of chocolates, 'and tell them that I did not mean what I said yesterday.' She thanked me, and said the laugh had done them all good. But I could see that she was shaking in mortal terror. I asked if I might see the Secretary. He was out. I left the cigar for him with my apologies, and went outside to wait on the portico. In a few minutes a watchman strolled over, tapped me on the arm and told me to move on. Without a word I left at once.

"All that day I paraded back and forth in front of the main step, waiting the chance that never came. They seemed to have decided that I was harmless. Nobody molested me.

"Well, I kept up the same tactics for ten days—except, of course, the chocolates and the cigar—waiting to intercept someone of more consequence than the underlings. I lived on one meal a day of dry bread and black coffee, and slept in the park by the river. It was early summer, so my bed, at any rate, was luxurious.

"On the morning of the eleventh day my funds had shrunk to forty cents. Feeling that I must do some-

thing decisive, I resolved to see President Ballard that day."

"You succeeded, of course?" said Vera.

"Yes. But by pure chance. My luck had turned in the night. Say what you please about a man being the captain of his fate," he exclaimed contemptuously, stopping for a moment in his nervous march, "it is chance, and chance alone which is despot of our destinies. But for the trivial accident that the coffee urn at my lunch counter was out of order, I might have tramped the sidewalks for a year. The Jap at the counter said it would only be ten minutes until he had the urn fixed, and a fresh brew of hot coffee ready; but I was restless and decided not to wait.

"It was then nine o'clock. I started at once for the University, reaching it in about twenty minutes. As I approached the main steps, a car drew up. An elderly man got out and proceeded rapidly up the steps. Three steps at a time I was after him, overtaking him in the shadow of the columns.

" 'Are you connected with the University?' I puffed.

"Stopping short he turned round suspiciously. I felt that he recognized me from the cartoons. He glanced at my shirt, then at my dungarees down to my top-boots, and last at my face. For perhaps five seconds he studied me. But it was none of it an ill-bred inspection. It was simply to satisfy himself, as was his first right, that I meant him no harm.

" 'Yes,' he admitted presently, 'I am a member of the University. I am the President. Ballard is my

name. And you, I believe, are the man whom the papers have been making sport of for the past ten days. What can I do for you?"

" 'First,' I replied, 'I thank you for treating me like a human being.'

"He seemed pleased. 'Come into my office,' he said, 'I have a few minutes to spare, but I must be off at ten to a meeting of the Regents.'

"He gave me a chair by his desk, and offered me a cigar. It was the first tobacco I had tasted in a week; and being a great smoker in those days, I can tell you I appreciated his courtesy.

" 'Now,' he said, when I had lit my cigar, 'out with it! I haven't much time, but I should like to know whether you are the genius you imagine yourself or just a plain crank. If the latter, you won't be the first that has pestered me; if the former, I shall see what can be done for you!'

"In five minutes I had given him a sufficient account of my researches and education, naming the men with whom I had studied mathematics and physics. Some of these he knew by reputation, and seemed impressed.

" 'Pardon my bluntness,' he said, 'but you will understand that I must convince myself that you are not merely using names which you may have picked up from some book or magazine. Some of the specialists you mentioned are famous. Have you letters, references?'

"I admitted that I had none.

" 'Then have you ever published any of these researches which you say you have carried out?'

"Again I was at fault. 'Why not?' he demanded suspiciously.

" 'Because they are of great value commercially,' I told him.

" 'Quite justifiable,' he said, 'but hardly in the true scientific spirit. However, that is a matter for your own conscience. I do not presume to judge men on their professional ethics.'

"Seeing him waver, I repeated my offer to stand an examination. He at once pressed a button.

" 'That at least is something we can test definitely,' he said. His call was answered by the Secretary in person.

" 'Please ask Professors Morgan, Bliss and Kramer to come here at once. I know they are somewhere about the buildings, for I came over with them on the ferry. You will probably find them in the physics laboratories and the mathematical library.'

"The Secretary being a well-articulated puppet showed no surprise, but left to do as he had been told. In a few minutes he reappeared with three keen-looking men in his train. Waiting until the door was closed President Ballard turned to the professors.

" 'Will you please find out what this man knows of mathematical physics? Make your examination brief but searching.'

"Professor Morgan, a mild old gentleman with soft but intelligent blue eyes, led off with a simple question on magnetism, which I answered in two words. He seemed surprised, and asked me a harder one, which I disposed of after a few moments' thought.

Then he proposed a real puzzler in the mathematical theory of heat, whose solution involved a severe mental calculation. Evidently it was a stock question with him, for he knew my answer to be correct, and I felt sure that he himself could not have done the work without paper and pencil.

"He passed me over to Bliss, a younger man, whose specialties turned out to be practical and statistical mechanics. I satisfied him with half a dozen easy answers.

"Then Kramer, a conceited young man in large, horn-rimmed glasses, with a narrow specialist's minute knowledge of the mathematical side of radioactivity, took his inning. Being young, he recognized and seized the unique chance of showing off before President Ballard. As I had seen no memoirs on his subject for almost a year, he gave me a bad ten minutes. But I concentrated every ounce of my strength on his questions, and in the end satisfied him by completely answering them all. He had shot at me exactly twelve highly technical questions, each of which demanded a strenuous mental calculation.

"The committee signified that it was through, and President Ballard addressed me.

" 'You may withdraw to the outer room, while we discuss your examination, Mr.——'

" 'Jevic,' I informed him, and withdrew. In a few minutes I was summoned before him again.

" 'Mr. Jevic,' he said, going to the core of the business at once, 'the chair of mathematical physics was

filled yesterday. I have nothing to offer you at present except an assistantship to Professor Morgan. The salary is one hundred dollars a month. Your duties will consist in preparing the apparatus for his lectures and keeping it in good condition, also in constructing new apparatus as he directs. I may say that the work will probably not take more than four hours of your time for five days in the week, and that all libraries, lectures and laboratory facilities within reason will be open to you without charge when you are not working for Professor Morgan. At the first opportunity which presents itself of offering you something better, I shall be glad to recommend you to the Regents, on the advice of these gentlemen, for immediate promotion. If the terms are satisfactory,' he concluded with a significant glance at my clothes, 'you may give this note to my Secretary, who will see that you are paid one month's salary in advance; and tomorrow morning you may report to Professor Morgan at his laboratory. Do you accept the offer?' "

Jevic quickened his restless pacing, and smiled happily before resuming his story.

"I all but embraced him. The memory of that moment is the happiest in my life.

" 'President Ballard,' I said, 'you are the first man who has spoken to me a man's word since I landed in this country. I shall never forget you. Today I am poor to the point of starvation, and you, in comparison, are an immensely rich man. Tomorrow I shall be rich. And you men,' I said, turning to the

three professors who had examined me, 'gave me a fair trial like the true men of science you are. Tomorrow I shall do the same by you.'"

"How did they take it?" Cunningham asked.

"They laughed, thinking the cigar or my luck had gone to my head. But before many years my main company had endowed the University with an adequate pension system, and President Ballard was spending a peaceful old age in his villa on the shores of Lake Como. Old Professor Morgan died soon after my appointment, but Consolidated saw that his grandsons started well in life, and we gave his daughter an acre of New York's choicest real estate as a wedding gift. Bliss came in with Courthorpe and me on the telephotoscope, made his fortune in five years, and retired. Kramer, after outgrowing his conceit, made an excellent mathematician, and helped me substantially in the cold light project. He stayed with me until the thing was a success, and I had my foot on the neck of the world's industry. Then he too retired on his fortune—I gave him ten shares in the original Company—and took up experimental spiritualism."

"No one can say that you forget your friends," Vera remarked.

"Nor my enemies, Miss Ferguson."

"I fail to see that you had any worth hating sufficiently to make it worth your while," said the Chief. "You are a worse puzzle than ever to me, Jevic. Surely the ignorant abuse of an uneducated contractor and the petty swindling of a dishonest bookseller did not outweigh the generous encouragement you received

from intelligent men like Ballard? Come, either you must admit some deeper motive for your unscrupulous tyranny over the power markets of the world, or you must grant Vera's contention and acknowledge an innate, barbarous lust for despotism."

"I was coming to it," Jevic replied. "First let me go back to my work at the University. Old Morgan left me practically to myself. His work took me but two hours a day. The rest of the time I spent over my own researches. Even then I was after my first great success—cold light, illumination without heat or waste. But I needed more money for experiments than the University, generous though it was, could possibly afford.

"Luck favored me again. One day in the physics library I came across an old volume of popular lectures on the gyroscope by John Perry, an English engineer. As a rare historical curiosity it caught my eye, and I spent a pleasant hour reading it through. In the last pages of his book, Perry remarked that, given a few thousand pounds for experiments, he would undertake to transmit visual images from London to Australia, and moreover do it without wires. He had made a thorough study of Clerk Maxwell's pioneer work on electrical waves, which showed mathematically the possibility of transmitting signals without wires thirty years or so before the first instruments were made by Hertz and commercialized soon afterwards by Marconi. In fact, Maxwell's equations started the whole wireless industry, and Perry seemed to have something similar in mind. But he

lacked the funds to make experimental apparatus. He declared it to be feasible for a man in Glasgow to see a friend in Pekin while talking to him through space as plainly as if the two were conversing in the same room."

"So that's where the telephotoscope originated," Alan interrupted. "Go on, Mr. Jevic; this is unwritten history. I always wanted to know what gave you the first hint."

"Perry's book, Mr. Cunningham, and Maxwell's equations as revised by Lorentz, McArthur and later men, gave me the first glance at the possibility. I saw in a flash how the thing, if once made practicable on a cheap basis, would net its inventor millions. A week's incessant labor over my calculations convinced me that it could be done. I at once set to work on the practical execution of my theory, translating my equations into physical apparatus. With Courthorpe's active help and Bliss as constructive critic, I had made a working model and secured the patents for the invention inside of six months after my first glimpse of the idea.

"We readily interested capital, and started manufacturing on a large scale. From the day we put it on the market the telephotoscope was a million maker. The jamming device, whereby privacy is secured at will, came a year later, and in a week the sales leapt up to treble their previous volume.

"Then the nagging began. Some wretched journalist dug up the mouldy account of my first day at the University. The cartoons were reproduced, and soon

the pack was in full cry. They said I was not a Serbian but a half-breed Chinese. They yapped at my money, they snarled at my brains, and they howled at me for a plutocrat. Fools! I needed not thousands but millions for my experiments! I still lived in one room on a hundred dollars a month and worked like a slave eighteen hours a day for seven days in the week.

"President Ballard, kind and thoughtful as ever, advised me to disregard the racket, saying it was only the yeasty frothing of the yellow press, and meant nothing more serious than a quickening decay of the older journalism. I followed his advice until they began on my red shirt. Every rag in the world took up the musty joke, jeering at me in print and cartoon because I, who now controlled millions, had once had but a single shirt to my back, and that a red flannel. Any other color, perhaps, would have been allowed to pass unhissed at. But red was the unpardonable sin. They began shrieking that I was a disguised anarchist.

"Then I replied. I gave the leading news agencies a concise statement saying that I used my wealth solely in providing adequate salaries for experts and in buying apparatus for a great investigation which, if successful, would save the United States alone hundreds of millions annually while at the same time contributing substantially to human comfort. As clearly as I could, I explained the nature of my investigation, showing how the production of light without heat or waste was within range of becoming a practical fact.

"I had misjudged my audience. The jeers and contempt, the personal abuse and red shirt rubbish burst over my head in a perfect tempest of fury. To me it seemed as if the world had gone mad. But President Ballard assured me that it was quite sane and normal. To back his incredible assertion, he took me to the old newspaper files in the public library.

"We spent a grim afternoon and evening going through the crumbling sheets that appeared when human flight and aerial navigation were but the ardent dream of a simple man, the American Langley. In amazement I read screed after screed of ridicule, invective and scurrility which the enlightened press of that time hurled at Langley because he dared to think in advance of his fellows. Practical men, financiers, great editors, jurists, respectable engineers, clergymen, inventors, big business men, politicians, educators—all, in fact, except reputable men of science—had taken a hand in the sport, and their wit made but sorry reading. I followed the sordid exhibition through to its dirty end, reading how Langley died, great, broken, and disappointed, knowing however that what the intelligence of his critics jeered at as 'Langley's folly', had been a glorious and triumphant success.

" 'Take your lesson from this,' Ballard said, 'and let them howl. Don't break your heart over a red shirt. What does it matter who or what your father was? He gave you brains! Let them call you a half-breed Chinese if it gives them pleasure! My advice to you, Jevic, is to let them go to hell, and get on with your work in your own way.' "

"Ballard was a brick!" said Vera.

"He was!" Jevic agreed. "For a year I followed his advice, disregarding the stale gibes at my red shirt and the feeble jests at 'cold light from frozen heat.'

"At last, after countless checks and heartbreaking disappointments, the investigation ended in brilliant success. Not counting salaries to experts, it had cost me close on thirty-three million dollars. But all this is ancient history, and I can hurry over it.

"Taking all my charts and calculations, and a carefully prepared lecture on the elementary physical principles that had made the discovery possible, I went to a special meeting of the Board of Directors of the Armstrong Light and Power Company, then the largest light and power corporation in the world."

"Which later blossomed into Consolidated," the Chief interposed.

"Yes, the Armstrong grew into Consolidated, and only because it had an intelligent board of directors who had sense enough to listen to a man who knew what he was talking about. As it was through him that the special meeting had been arranged, President Ballard came with me. The Directors were at first skeptical. One by one, however, as I exhibited Moseley's curves, Hexamer's interlocking stereoscopic diagrams and my own expertly prepared graphs, they showed interest; and when, at the end of a four hour lecture in which I went into every phase of the basic theory at the roots of the practice, I produced one of the cold globes from my pocket, shining like the sun, they were convinced to a man. Not one word had I said

of the financial possibilities; they were obvious in that dazzling globe which passed from hand to hand. I remarked now that similar globes would cost about fifty-two cents a gross wholesale.

"They made me a cash offer of one hundred and fifty million for the patent rights. I refused, and left the meeting with Ballard.

"The next morning, before I was out of bed, two of the Directors called at my room and asked my price. One of them had a morning paper in his hand. I asked to see it, intending to base my price on the morning news. If the paper contained no sneer at my red shirt, the invention was not for sale. It would be donated, a free gift, to the nation. If so much as one gibe appeared, my price was to be the controlling interest in the Armstrong Light and Power Company, with ten extra shares thrown in as a bonus for Kramer.

"I opened the paper. In the first column was an account of an interview given by President Ballard, in which he announced the final and complete success of my long investigation, incidentally pointing out its basic importance for all industry. There was no comment on this interview. Turning to the editorial page, I saw the now familiar cartoon of myself, appearing then for the first time, 'Anarchy enlightening the world'. It was a crudely executed conception of a Chinaman in red shirt and blue overalls trying to set fire to an iceberg with a match labelled 'cold heat'.

"The die was cast. I named my price. The Directors demurred, trying to persuade me to accept a lump

sum. It would only be a few years, I pointed out, until the new invention would displace at least half of their chief product, for if they refused I intended to start manufacturing myself at once. Their acceptance would merely give me about five years' start to the inevitable monopoly, and in exchange for wealth instead of slow ruin to them I wished that gain in time for my own purpose. Finally, after much argument, they left, saying they would let me know the decision of the Board that night.

"They returned at six o'clock. At five minutes past the agreement was signed, and witnessed by the hall-boy and janitor, giving me fifty-one shares plus ten, sixty-one in all, of the capital stock of the Armstrong Company. In return for these considerations the company received the exclusive rights to manufacture and sell all appliances for the production of cold light.

" 'Now,' said one of the Directors, folding up his copy of the agreement, 'what will you do with the pull this gives you? In ten years, if you are so minded, you can dominate the light and power industry of this continent.'

" 'I shall do better than that,' I replied. 'With this for a start, within ten years, I shall own the light and power industries of the world. In fifteen, when I have solved the problem of transmitting energy without wires through space, I shall have the world's industry in the hollow of my hand.'

" 'Perhaps. And then what?'

" 'I shall make the world eat my red shirt!'

" 'They thought I was joking, but I soon convinced

them to the contrary. 'When it is in my power,' I continued, 'to dictate the price of each necessity of life to every human being on this globe, I shall say who shall eat and who shall starve, who be clothed and who go naked. And any who are so unfortunate as to dislike red flannel shall get nothing better.' "

"Which means, I suppose," said the Chief, as Jevic resumed his seat, "that you will exact an abject apology from every human being for the crass stupidities of a few who perhaps died before this generation was born? What are you waiting for? You solved the power transmission problem nearly thirty-four years ago, and you have industry where you want it. Go on, and carry your futile revenge through to its illogical end. We can't stop you, although we can, perhaps, as so often in the past, make things unpleasant for you and your crowd of despots."

"No!" shouted Jevic, bringing his doubled fist down on his knee. "I shall not strike yet, but in six months from now, when you and all like you will be powerless to sting me. I shall be supreme, indisputably master of the world! And the world shall eat my red shirt!"

"You haven't yet told us, Mr. Jevic," said Vera with a mocking smile, "exactly what you mean by that mystic formula."

"It means, Miss Ferguson, not an apology, not an abject crawling to me as master. No! What do I care for the servility of those whom I despise? It means that once and forever I will make this world respect intelligence! It has grovelled long enough on its belly

to fools and parasites, and it is time there was a new order."

"Meaning it shall grovel to you, Mr. Jevic?"

"Not grovel, but walk with me! Am I not better than a horde of incompetent office holders? I shall make laws that will insure the safety of intelligence and the well-being of humanity forever!"

"The world has tried the benevolent despot as a cure for all its ills on several occasions in the past," Ferguson remarked, "and invariably it found the medicine worse than the disease. Better be sensible, Jevic, and forget your precious shirt."

"The world hasn't forgotten it! No! When my hour of triumph comes I shall wear it again, and trample——"

"In your top-boots, Mr. Jevic?" Vera asked with a sly smile. Jevic suddenly laughed.

"You are good for me, Miss Ferguson," he said. "If you were my secretary, instead of the charming young woman who now fills that position, I'm sure I should burn my relics in a week. It is partly to please her," he went on with a laugh, "that I still keep them. She declares that red suits me better than any other color. She is right. The leopard cannot change his spots, and I'm spotted red all over."

"Perhaps she is ambitious to be Empress of the World and Queen of Creation," Vera suggested with a twinkle in her eyes. "I know the feeling perfectly. That is partly why David is so fascinating—there are endless possibilities in that young man."

Jevic actually blushed. Vera went on mercilessly.

"And if I had met you, Mr. Jevic, fifty years ago, you might have been quite tame and respectable by now, all your spots a beautiful, deep brown. Just think what both of us have missed!" She sighed. "As it is, I shall have to content myself with civilizing David MacRobert, and he's not half so barbarous as you!"

"Perhaps you will find him savage enough," Jevic retorted drily. "I reasoned with him once for six hours, and succeeded only in working him into a dumb rage."

"So long as he doesn't shout when he's angry, I shan't mind how mad he gets. By the way, Mr. Jevic, when do you expect to put on this wonderful shirt of yours?"

"The moment I solve the great problem. When I can release and control the energy in atoms, then the world will lie in the palm of my hand, and I shall put on my insignia of victory."

"How strange! That is just what we are slaving at all the time, and father has promised me a diamond collar when we win. I wonder which it will be, my diamond collar, or your red shirt?"

"My shirt! The solution I have told you, is already in sight. Another six months and I shall have solved the problem clear through to the last decimal!"

"Then we must do it in five months and thirty days," said Vera with a melancholy sigh; "and all of us are nearly worked to death as it is."

"Then persuade your father to join his forces with mine," Jevic took her up eagerly, "and we shall do it together in three months. My staff needs a new in-

fusion of first-class experimental talent, yours the same on the mathematical side. Together, your forces and ours, we could break that seal in three months—in less! That indeed," he went on earnestly, unconscious of the Chief's cold smile, "is the prime object of my visit—to persuade your side to let bygones be bygones, and join ours."

"I thought so," said the Chief quietly.

"Then why not accept? You cannot beat me!"

"If we can't, then the poor old world will be in a very bad way indeed. No, Jevic, it is either Consolidated Power or the Independent Laboratories that will solve the great problem. But not both."

"Or David MacRobert," murmured Vera.

"Possibly MacRobert," the Chief agreed. "But one thing is final; there can be no alliance between us and Consolidated. Our past records are incompatible."

"You may change your mind in a day or two," said Jevic with an evil smile, rising to take his leave. "Think how necessary it is for people to have bread! To gratify your obstinacy you would not care to see the millions of Europe starving, I presume? You are so strong on the humanitarian side, you know."

"What do you mean?" The Chief, white with anger, leapt to his feet.

"You may guess tomorrow, if you will read your morning paper. Remember what I have said while you are enjoying a plentiful and well-cooked breakfast."

He turned to go. Ferguson, trembling with passion, caught him by the arm.

"Look here, Jevic! If you try anything like that,

I shall smash you without mercy when my time comes, and it is coming before many weeks!"

Jevic shook himself free. "Au revoir! Come over and see my laboratory the day after tomorrow."

Still smiling, Jevic turned at the door. Ferguson was beyond words. For the first and only time in his life his temper had the better of his good sense. He was white with anger, and stuttered helplessly in an attempt to speak.

"Bring your daughter, Ferguson, and Mr. Cunningham too. They will enjoy looking over my curios. And their presence will prevent me taking an unfair advantage of you. I may make you a very handsome offer!"

And bowing himself out he left his audience speechless with indignation. After a minute, however, Vera laughed.

"Acting is his one weakness," she said. "He should have gone into heavy melodrama. Father dear, you are in worse shape than I thought. This won't do; you must rest. You never, until two minutes ago, allowed your temper to get the better of your sense of humor. Come and have lunch, and forget him! He's harmless."

CHAPTER VI

MacRobert Tries His Muscles

FOR once breaking his rule to read nothing until after breakfast, the Chief opened his *Daily Scientific Bulletin* and ran his eye down the news.

"The mysterious sickness is spreading," he announced, "We had better see that all of our own people who have anything to do around the machinery wear their ray guards. Will you attend to it, Thompson?"

Thompson, who occasionally breakfasted with his Chief, rose at once.

"The regulation lead-actinite hoods, gloves and aprons, I suppose, sir?"

"Yes; better too much fuss than too little. Hurry back. We'll keep your breakfast warm, and I'll see that Alan doesn't make away with all of your beloved ham."

The Chief continued anxiously to scan the news. Reading the second page, he started slightly. "This must be what Jevic meant."

He read the bald news item, printed in the *Scientific Bulletin* without comment on the misery which it implied for millions of human beings.

"'We learn,'" he read, "'that the Consolidated

Power Corporation has announced an immediate advance of three hundred per cent. in the cost of its product to all of its Russian customers. The Corporation gives as its reason for this unprecedented advance the recent grave instability of the Russian labor market. The trouble, which, as we have frequently reported, originated six months ago in a dispute between the agricultural laborers and the wheat producers, has spread in the last month to all classes of workers, until at the present time the entire Russian Republic is facing anarchy.

" 'The wheat producers stand firmly on their contention that the former cost of operation left them a bare margin of profit quite inadequate to meet any increase in the share due the operatives. If this contention be based on fact, the three hundred per cent. increase in the cost of power will, of course, prohibit the harvest of the new crops which in many States of the Republic are already ripe. It is manifestly impossible at this late hour for the various European commissariats to make the necessary provisions for absorbing the sharp increase in the cost of wheat and passing it on ultimately to the consumer. Indeed, it is doubtful, whether such a plan, even if feasible for relieving the immediate emergency and harvesting the crops, would afford even a temporary solution of the difficulty; for the retail price of wheatstuffs is already only just within reach of the mass of workers.

" 'The situation is the more serious that the disaffection of labor has spread recently to the international air freight service at Odessa and the inland

grain ports, making it improbable that the wheat reserves can be shipped expeditiously, if at all, in case of an emergency.

"The Power Corporation contends that the three hundred per cent. increase is necessitated by the great and growing difficulty in obtaining either competent labor to operate its Russian plants, or reliable guards in sufficient number to patrol its extensive properties.

" 'Elsewhere we print a communication on this subject from the well known mathematical physicist, David Lindsay MacRobert.' "

"Oh, read it!" exclaimed Vera. "Alan! that's what he meant yesterday when he left us."

The Chief turned eagerly to the daily correspondence. "Here it is:

" 'To the Editor. Sir: It is the belief of all financial experts that the Consolidated Power Corporation could reduce the cost of its product to Russian consumers fifty per cent., and still make a handsome profit on their investments in the Republic. Formerly I was of the same opinion. As the incident which caused me to modify that opinion may be of interest to your readers, I beg leave to recall it.

" 'During my brief association with Consolidated Power as an investigator, I had frequent opportunities for discussing the Russian branches with the President, Mr. Boris Jevic. In particular I recall with pleasure one debate which lasted six hours. Considering Mr. Jevic's intellectual preeminence, I am happy to acknowlege that he won the debate. I stood out for a fifty per cent. reduction at most, arguing that any

sharper cut in the cost of power to the Russian consumers would jeopardize the financial stability of the Corporation as a whole. Mr. Jevic argued for a seventy-five per cent. reduction, maintaining that the Corporation could sell its products at one quarter of the current prices to Russian consumers, and still have an adequate margin of profit. He convinced me, but it took him six hours.' "

"I should like to know," Vera interrupted, "exactly what they said in that famous debate."

"So should I," said the Chief. "But listen to the end of his letter—the tail of the scorpion. 'Under the circumstances, it is perhaps only just that I should be the first to announce Mr. Jevic's intention of reducing the cost of power. From certain information recently acquired, I can state positively that Mr. Jevic will announce the reduction this afternoon or evening. Tomorrow morning, then, Consolidated Power will be selling its products in Russia at one quarter of the prices quoted yesterday.

David Lindsay MacRobert.' "

"If Mac is bluffing," Cunningham remarked, "he will look pretty small tomorrow. Jevic isn't the sort of man to be wheedled into decency by a public presentation of soft soap and taffy."

"David isn't bluffing," said Vera with quiet assurance. "I saw that yesterday in his eye when he left us. He has something up his sleeve."

"Then I hope to goodness it's the winning card!" said the Chief testily. "If he hasn't got that, we're done for, and might as well go down at once to Jevic's

laboratory and take what terms he pleases to offer. It is unlike David to bluff, but honestly I fail to see his game."

"Bide a wee, father, bide a wee. Wait till you glimpse David's card. It's an ace, I'll bet my head."

"Of hearts, of course?" Alan suggested.

"Eat your mush like a good boy," she replied sweetly, "and don't spill it all down your bib."

The meal proceeded in silence, and presently Thompson rejoined them.

"The blisters haven't broken out on any of our people," he said, "but the other has. Such a snappish, discontented, irritable crew I never saw in my life. Even poor old James, the decentest and least pugnacious of the whole lot, pitched into me like a drunken stevedore when I told him to fit out his men with ray masks. I've a good mind to go back and punch his head!"

Vera laughed. "Why, you've got it yourself, whatever it is! Try some more pepper on your canteloupe, and you'll cool off."

He glared at her, and began eating in silence.

"Do you suppose it's catching?" she asked presently in a stage whisper. "Heavens! if I get it, what shall I be like?"

"Yourself!" Thompson snapped, and then broke into a roar of laughter.

"Thank you," he said, subsiding. "That was good of you, Miss Ferguson."

"Don't mention it," she replied. "I'll get even later. Listen! Somebody's at the door. It's David!"

She ran out, returning gaily after a long whispered consultation in the hall. MacRobert followed.

"Don't tell me," exclaimed the Chief rising, "that you have at last seen the light in the East and decided to join us?"

"I won't," MacRobert answered soberly, "for two reasons."

"And what may they be?" the Chief incautiously asked with a smile of pleased anticipation.

"The first is that it would be a lie. The second——"

"You needn't mind the second," said the Chief, sitting down hastily. "Draw up a chair and have some breakfast."

"I must decline for four reasons. The first——"

"Bother your reasons! Stand on your head if you like!"

"Father is suffering from blisters, I think," Vera explained kindly. "Don't mind him, David. Mr. Thompson just recovered a few moments ago from a terrible attack of the same disease. He was as ugly as a hard-boiled bear. Have you caught it yet, David?"

"No, Vera. So far I've been immune. But before the sun sets I may catch something infinitely worse."

"A Tartar?" suggested Vera.

"Some of his newspaper friends call him one, I believe."

The Chief sprang to his feet, trembling with excitement.

"If you really have an answer to Jevic's latest outrage, David, you can take everything I've got!"

"Will you give me a free hand in your ray chambers for about four hours, sir?"

"Anything and everything you want so long as you smash Consolidated into harvesting and moving the Russian crops!"

"Then let me have two of your best ray men for the next four hours. It will be a three-man job."

"It wasn't a bluff, then?" Cunningham ventured.

"A bluff?" echoed David in bewilderment.

"Your letter to the *Bulletin,* I mean. I thought you were trying to flatter Jevic into revoking the three hundred per cent. raise. By some accounts—which I for one take no stock in—he's just vain enough to call off the deal for a little public praise like yours. Even at that I thought the seventy-five per cent. reduction a trifle stiff. He may climb down, but he isn't going to break his neck to amuse the spectators."

"Cunningham," he answered shortly, "you have been neglecting your mathematics for some of this yellowjacket psychology. You are becoming altogether too subtle to think straight. Jevic has blood in his eye. Vera has told me of his threat. He means war, and he means the real thing. The first position he plans to take is yours, the Independent Laboratories. Ferguson has blocked some of his crookedness schemes persistently and thoroughly for twenty years, and Jevic is out this time to capture your Chief. He knows that Ferguson will not stand by and see the workers of Europe starved. This extortionate raise in the price of power means nothing less than wholesale starvation, and Jevic knows it. That lie about not being able

to get sufficient guards to take care of Consolidated's holdings was a deliberate, sneering insult. The people will never get within forty miles of a single plant to operate it themselves and so save their crops. A child in the fourth grade knows that one man can sit in any of Consolidated's plants and defy an army. Attackers would be wiped out by the raising of a switch. And you know that unless we block Jevic at once, Ferguson will have to take what terms he can get. So much for Jevic's conceit. Now for what you call my bluff."

He produced a small card, closely scribbled over with figures and symbols. The Chief snatched it from his fingers.

"I beg your pardon, David! But this is vital."

He bent over the card, devouring the figures.

"Wave-lengths and ray-intensities, of course?" he demanded.

"They are," MacRobert confirmed.

"I never saw such a scale! If you turn all these loose at once, they'll raise the very devil of a tune!"

"That's just what I plan to do. And I'll guarantee to produce a symphony in your ray chambers that will be heard and appreciated in Central Africa."

"Ah!" exclaimed the Chief, "at the new central power stations around Lake Victoria Nyanza, for instance?"

"Yes. And if that doesn't please the natives Consolidated has several handsome and expensive plants under construction in the Congo basin. These might be induced to respond with a melodious echo."

"Great!" cried the Chief, springing to his feet. "I catch only a glimpse of your plan, but I'll back it even now for a winner." His face suddenly clouded, and he spoke doubtfully. "Of course the main idea is so obvious once it's pointed out that I wonder it did not occur to some of the men here. This won't violate international law, will it? We can do nothing like that, you know, even to move the harvests."

"It will violate no law, national, international, human or divine," MacRobert reassured him. "The international law does not prohibit a single wave length or ray intensity in that list. Look at it."

"You are right," the Chief agreed. "None of the prohibited numbers are here. I beg your pardon, David. Of course you would not be such a fool as to put any of them on the dials. It might make it very uncomfortable for ourselves if you did."

"No law will be violated. Jevic has broken the first law of humanity in seeking to starve a part of the world, and we are justified by the second law, which is that of self-defense. And, I repeat, not even the spirit or the letter of any law will be violated by this scale in the use which I intend to make of it."

"Half that scale I confess I do not understand," the Chief replied doubtfully. "However, it's a great idea, and I don't wish to discourage you. What on earth gave you the hint?"

"Never mind that now. Where are my two men?"

"You can have Wills. He's one of our best at the rays. The other is Thompson."

"Let me finish my ham," Thompson begged, helping

himself to his fifth slice. "I'm suffering from blisters and need lots of salt nourishment."

MacRobert laid a hairy paw on Thompson's shoulder, dragging him off, ham and all.

"Send me Wills at once, and please see that no one gets into the ray chambers until we come out."

"Right!" said the Chief. "I'll send Wills myself. By the way, as one last caution, I hope you can control any disturbance you may start?"

"Positively. There is not the slightest danger of the rays getting out of hand. I'll tell you about it later. Watch for this afternoon's *Bulletin*. It should be out early."

Vera and Alan were left alone.

"Isn't he a darling!" she exclaimed.

"Thompson doesn't think so," Alan replied, sitting down to finish his own breakfast in peace. "I'm glad MacRobert didn't take a fancy to me."

"You're jealous," she murmured, with a rapt, far-away look in her eyes. Incidentally she cornered the honey, leaving him nothing but molasses, which he loathed.

CHAPTER VII

The First Extras

LIKE lost souls Vera, the Chief and Cunningham roamed the laboratories, meeting unintentionally outside the locked ray chambers, only to disperse guiltily and resume their anxious wanderings. The minutes crawled by like tired snails.

It was four o'clock when the first extra appeared. At intervals of half an hour the Chief had sent Alan out to the news depot at the corner, and at last his persistence was rewarded. Alan returned with an ornate special edition of *The Torch,* then the official daily journal of the Consolidated Power interests.

"Jevic climbs down!" he cried. "Listen:

" '*The Torch* takes pleasure in announcing a material reduction in the cost of all Consolidated Power's products to its Russian customers. The scale, to take effect tomorrow, will be based on one quarter the rates prevailing yesterday. This action has been under consideration for many months by the President and Directors of the Corporation. Only unavoidable delays consequent upon labor conditions throughout the Russian Republic have prevented the earlier execution of this new policy, which was adopted six months ago by the Corporation.

" 'By an unfortunate error, our contemporary, *The*

Daily Scientific Bulletin, this morning printed an erroneous version of Consolidated's new Russian policy, which, as already pointed out, is to go into effect tomorrow. The *Bulletin's* grave error was, we feel confident, due to the inexperience of some reporter, and quite unintentional. We shall not, therefore, ask the customary formal apology. An apology is the less necessary in view of Mr. David L. MacRobert's letter printed in the same issue of the *Bulletin.*

" 'Touching Mr. MacRobert's interesting communication, Mr. Boris Jevic wishes to recall that he always found Mr. MacRobert a courteous opponent in debate, ready to withdraw from an argument the moment he was honestly convinced of his error. But Mr. Jevic begs to correct Mr. MacRobert on the outcome of the six hour debate to which he particularly refers. According to Mr. Jevic's recollection, Mr. MacRobert was still unconvinced at the close of the debate. Mr. Jevic trusts that Mr. MacRobert will profit by his error, and in future abstain from tampering with matters in which he is not an expert. A scientist of his ability must be aware that arguments are not unlike certain formulas; there frequently is more in them than immediately strikes the eye.' "

"Well," remarked the Chief, "that's one way out of a difficulty."

"Yes," Vera agreed, "but I prefer a man who walks forward, not backward like a crab. He seems to be lecturing David in the last of his reply. Well, we may allow him the privilege of a vicious old age to preach

wisdom and charity to inexperienced youth. He is beaten; that's the main thing. What's the rest of that gaudy *Torch* spluttering about so brilliantly, Alan?"

"Can't you guess, sir? All these peacock hues are the flashings and struttings of our friend Jevic. They prove beyond the shadow of a doubt, and to the complete satisfaction of nobody but a fool, that Consolidated Power is the only true and generous friend the world ever had, and Boris Jevic its unassuming benefactor."

"Give the man his due, Alan. And you too, Vera!" It was one of the very few times that the Chief had ever spoken sharply to his daughter. "Anyone can throw his handful of mud at genius," he went on passionately, "and Jevic is one of the rarest geniuses that this world has produced. Think of what he has done! His solution of the power-transmission problem would alone put him in the first rank. What I admire most about his handling of that," the Chief continued warmly, "was his independent courage in touching the thing at all. Ever since the early years of the Twentieth Century when Tesla startled the world by declaring that the thing could be done, even reputable men of science joined with the press in hooting at the idea as absurd. Tesla's 'mushrooms' on Long Island were as great a joke in the eyes of the over-cautious and the under-intelligent, as were ever Langley's kites and planes. 'Transmit electric energy from one station to another without wires?' they sneered; 'hurl thunder-bolts clear across the blue from New York to Mexico? Oh, but that's ridiculous, you

know! For who would have a hand hard enough to catch them at the other end?' Then Jevic, smarting from the public's reception of his cold light, seized the problem, perhaps as a challenge to his detractors, and solved it.

"So," he concluded, "until either of you have bettered any one of Jevic's innumerable contributions to science, pure and applied, from the telephotoscope and his theory of matter to the transmitting of energy by sending it at no cost through empty space, you had better go gently on the few human foibles of our enemy. If instead of abuse all his life he had received a tithe of the praise which is due him, I know that he would have been a different man, and the history of the last fifty years far other than what it is."

"Father," Vera murmured, "we forgive you, for we know that you have blisters."

The Chief inspected her, a humorous twinkle hovering about his eyes and mouth.

"So have you, I suspect," he said. "Wouldn't you like to know what David and his two disciples are up to in there?"

She sighed. "You are a born truthfinder, father. If they don't come out soon I shall burst. Alan, do go and see if the *Bulletin* is out yet."

When Alan returned with the paper, MacRobert met him at the door.

"Has it worked?" he asked, with an audible effort to control his voice.

"Apparently. Here is what you want, isn't it?"

With a steady hand he took the paper and glanced at the simple item, relegated unobstrusively to the "General Intelligence" on the last page. As he began reading aloud, Vera and the others crowded eagerly around him.

"'*New London, West Central Africa. Wednesday, July 7th. 2:30 p. m.* (*N. Y. time*). A widespread electrical storm of terrific violence has completely destroyed the great central power plants of the Consolidated Power Company under construction at Roosevelt Bay, Livingston Beach, and Point Stanley on the eastern shores of Lake Victoria Nyanza. As the storm gave ample warning of its dangerous nature there was no loss of life. The material loss can only be estimated at the present time, but a conservative figure puts it at two hundred million pounds."

MacRobert dropped the paper. "Did either of you men set a pencil of rays for the plant at Point Stanley?"

"Not I," said Wills.

"Nor I," Thompson answered promptly.

MacRobert frowned. "Neither did I," he muttered, biting his lip.

"A mistake in calculating one of the wave lengths, or perhaps in some of the ray intensities?" the Chief suggested.

"I should like to think so!" MacRobert replied fervently. "But either suggestion is ruled out absolutely. All the work was by its nature self-checking. I went through all of it five times. To make sure as a final check, yesterday afternoon I recalculated each wave

length and ray intensity of the whole scale by three independent methods, and the results agreed to nine places of decimals. We should need only four to hit a spot the size of any of the African power plants at their precisely known distances from us. All that is necessary is to get the cone of rays curved sufficiently to clear the earth's surface, and then pass the axis of the pencil through the spot we want to hit. Four places of decimals are close enough for that; the scattering of the rays is taken care of by sweeping the pencil back and forth. It destroys only when the object is in the exact focus of the rays. We get the focus by feeling out the intensity as it varies in the sweeping. Then it is nothing to bunch up the spread and hit the mark full on. An amateur could do it, using not more than four places of decimals. To make dead sure, however, I used all nine. Didn't you men, too?"

Thompson nodded.

"Of course," said Wills. "The readings are still on the dials if you care to verify my work. But we all looked at each of the three dials and checked each of the settings before we finally sparked the glow. There was no mistake in any of our work. The trouble is elsewhere. Perhaps the *Bulletin* has made a mistake."

"Then this means, I suppose," said Ferguson gravely, "that the rays got out of your control? In other words that you failed to localize the action of the destructor?"

"It looks like that," MacRobert admitted grudgingly.

"Never mind!" said Vera. "You did the main thing and scared Jevic into letting the Russian harvests move before you destroyed the rest of his African stations. He must have suspected what was going to happen."

"What makes you think so?" the Chief asked.

"Well, the *Torch* got out its big extra an hour and a half after you had destroyed the Nyanza plants. Obviously everything except the notice about the reduction of rates had been set up hours before, perhaps early this morning. Cheer up, David! You've done the job."

"The job is finished, I admit. But what else has started?"

"You're not going to second Jevic's brilliant lunacy, are you," Cunningham broke in, "and tell us that your calculations only have to be started in order to perform miracles on their own hook? And look at this," he went on, handing him the *Torch*. "Evidently he means to imply that you don't know enough to handle your own formulas."

With a puzzled frown MacRobert read the last of Jevic's announcement in the *Torch*.

"He seems to mean something of the sort," he said, tossing the paper aside. "Maybe it is only a coincidence working on a guilty conscience, but Jevic's remark that there may be more in certain formulas than meets the eye, is the sort of threat that gives me gooseflesh."

"You can't help being superstitious, David," said Vera. "You're Scotch."

"I'm not superstitious!" he retorted hotly, his red hair suddenly seeming to become redder. "And as for being Scotch, I'm proud of it!"

"Of course you are," Vera assured him. "But that's no reason why you should break out all over your body in blisters about it."

"Come, children!" said the Chief. "If you keep this up you'll both catch what poor Thompson had at breakfast time."

MacRobert swallowed once or twice, and his hair gradually lost its fascinating bristliness.

"Jevic is a shrewder man than some of his enemies believe," he remarked with a meaning look at Vera. "It is not for me to criticize his little fancies. However, I was not referring to my own figuring a moment ago. I meant rather the new twist our experiments must have given what the old Nineteenth Century fellows called the ether. We may have started something like a whirl, or vortex, just as you do when drawing a spoon sharply through a cup of tea. That's what I meant when I feared that we may have started something else in doing Jevic's little job for him. It will be interesting if the whirl rips clean over Point Stanley and doesn't stop till it reaches the edge of the cup."

"It will indeed," the Chief assented drily. "But you are not serious, are you, David?"

He glanced at Vera before replying. "Of course I was only joking," he said.

"You shouldn't fib, David," said Vera primly. "It is one of the things you don't do well. As for the rest

of you, I fail to see why you all look so glum. Haven't we taught Consolidated the lesson which it has been aching for twenty years to learn? We ought to celebrate, not stand here moping like six dejected fowls."

"That's the spirit!" said Wills. "With the Chief's permission I will leave you now to start a celebration of my own."

"Where?" MacRobert demanded curiously.

"In my hammock. Call me early, Alan dear, for I don't want to miss my dinner."

"Now tell us," said Vera, linking her arm in David's, "when, where and how you found your wonderful idea."

"That is soon done, Vera. The 'when' was the second day of my sojourn with Consolidated. The 'where' was in Mr. Jevic's private laboratory. As to the 'how', he asked me to check up an elaborate mathematical research of his relating to the direct transmission of energy. I did so, incidentally noticing that his calculations contained several brilliant discoveries of which he, apparently, was unaware. One of these Thompson, Wills and I put into practice today."

"Beautiful!" murmured the Chief. "Shot with his own gun. Go on, David."

"As it was his work," MacRobert continued, "I of course asked Jevic whether he knew that his equations contained the whole theory of the long-sought disintegrating rays and their directed transmission through space. For reply he mounted his highest horse. He told me that I must be dreaming.

" 'If you find anything of which I am ignorant in

my work," he wound up with a flourish of all his jewelry, 'it is yours by right of discovery. Make any use you wish of what you imagine you have found.' "

"Then it was not a simple electrical destructor that you let loose over the Nyanza plants?" the Chief asked. "Of course, from your scale, which I only half understood, I expected something new, but imagined it merely a recombination of known waves and rays."

"I should say it wasn't a simple electrical destructor! That's how I managed to keep strictly within the law. They haven't legislated yet on what we used, for the simple reason that they don't know such an instrument of destruction exists. And nobody is going to give the secret away in a hurry. The *Torch* will probably report an electrical storm, just as the *Bulletin* did; and we shall have to let the public swallow the report. No outsider is going to get close enough to the ruins to find out what happened. When Consolidated's engineers make an examination tonight their modest estimate of two hundred million pounds worth of damage will take a sudden jump to half a billion. For they will find that every ounce of metal in their generating machines has gone rotten. The only salvaging possible will be with shovels and a train of rubbish cars."

There was an awkward silence. The Chief's lack of enthusiasm over Mac's splendid feat seemed so ungracious that presently Cunningham plunged into a diversion.

"By the way," he remarked, "has it struck any of you that the *Bulletin* treated this item as of minor

importance? There was no heading for it on a single page. Before I found it I had to comb the news. It was all taken up with reports of the new disease."

"It is rather strange," the Chief agreed, "now that you call attention to it. The disease must be getting out of hand."

He picked up the *Bulletin* and glanced rapidly over the headings.

" 'The mental distress appears to be giving most trouble, especially in Russia. Unless the condition abates within the next twenty-four hours the authorities fear an outburst of physical violence, perhaps even of anarchy. We seem to be slipping back to the nineteenth century.' Hullo! here's something more interesting.

" 'The Mount Ellis Stellar Observatory reports a unique astronomical occurrence. Spectograms taken last night of eighteen of the most remote spiral nebulae show a magnificent outburst of new stars. In one of the nebulae alone no fewer than 452 new stars flashed out overnight. Comparisons with spectograms taken two nights ago reveal not a trace of the new stars reported, numbering in all over five thousand.'

"That's a stunner for you!" the Chief commented, unconsciously fixing his eyes on MacRobert.

" 'Thou canst not say I did it,' Mac quoted solemnly. "Those spectograms must have been reduced before I was out of bed."

"We'll let you off this time," said Vera; "but don't try any more ruin and destruction until you know you can shoot straight."

"I won't, Vera," he promised. "In fact I shot against my will this time, and only because it seemed the one possible chance of bringing Consolidated up short. I may as well confess," he went on seriously. "Six months ago I got a ghastly scare. I had just completed my theoretical work on the disintegrating rays, based on what Jevic told me I might use, when the idea struck me to try out the rays practically on a very small scale.

"For about three dollars I improvised a crude power and ray transmitter of the pattern called for by my calculations. Then, setting it up in my room, I began fooling. First I tried directing the rays at a small heap of rusty nails, old hinges, and broken screws on the window sill. It worked like witchcraft. The nails and stuff kept their shape perfectly. But when I tried to pick them up they were so rotten that they went to powder in my fingers.

"Then I shot at an old smoke stack in the abandoned foundry in the next block. It sat down in a pile of dust. I got ambitious, and looked up the exact bearings of the old *Gigantic* hulk."

"So that's what happened to the famous wreck, is it?" the Chief interrupted. "You mean the *Gigantic* which went full steam ahead onto the beach off Cape Terrey about sixty years ago?"

"That's the one. It took me some hours to adjust the curvature of the ray cone, for at that time I had carried my work only to two decimals. But in the end I made a clean shot. Accuracy at fifteen hundred miles wasn't bad for my third shot, even if I did have

to spray the pencil of rays about like a garden hose to hit my mark.

"The papers duly reported the disappearance of the hulk in a sudden electrical storm—as they imagined. And at the same time they reported a mysterious corrosion of the watermains at Blytheport, about three hundred miles due east of where the *Gigantic* was beached. I smashed my toy in a hurry, and swore to try no experiments until I was sure of accuracy to at least the fifth decimal."

"Your experiments must have been going on about the same time as a health scare of which Doctor Brande told us yesterday," said Vera reflectively. "He said there were blisters, or rumors of blisters about six months ago, but that they all passed off without materializing. David, if you are responsible for all the bad tempers about this laboratory, I'll never forgive you."

MacRobert laughed. "What Jevic would call chance," he said, "and other people a rank coincidence. There can be no connection; I feel sure of that."

"So far as you might be concerned in the present outbreak, that's obvious," the Chief agreed. "You did not start your rays until hours after the disease had appeared. Possibly there's another nigger in the woodpile. What do you say, Vera, shall we accept Jevic's invitation and pay him a visit tomorrow? I don't mind returning his courtesy now that David has put a good, stout club in my fist."

"It would only be polite, I think," she said demurely. "Alan comes too, of course?"

"Certainly. Jevic invited him, you remember."

"If I were you, Mr. Ferguson," said MacRobert, "I should not reject whatever Jevic may offer you, just because it comes from him. Think over what he has to propose, and don't, whatever you do, act in temper on the spur of the moment. This afternoon's work will make him generous if not exactly humble. There are more ways, remember, of compromising with a bear than by shooting him."

"What ways, for instance?"

"You might trap him."

"Or accidentally step on the spring myself. No thank you, David. Nothing softer than a bullet in his fat is healthy either for us or for the bear in this case."

"You know him better than I," he said, turning to go.

"Surely you are not going to desert us now, David," said Vera, "after all you have done for us today? You have saved the Independent, and surely you haven't the heart to leave the good old ship to sink or float as chance takes her?"

Seeing him hesitate, she touched his arm appealingly. "Be one of the happy family, David, and help us to beat Jevic! Think of the great problem—it will take all your mettle. With you we can solve it in two or three months; without you, perhaps never. Jevic swears that he will win within six months. Do stay! Our food is plain but plentiful. And my golf is improving every hour. Doesn't all that bill of fare tempt you?"

"I long for the fleshpots," he admitted regretfully, "but I'm incurably obstinate. To save my face I must put Jevic out of business single-handed. If I don't he will patronize me to his dying day, and as he looks now, he will probably live to be a hundred and eighty. Don't make it too hard for me, Vera! The sight of friend Thompson here devouring fried ham as if it were nothing choicer than oatmeal flapjacks, nearly drove me frantic. No, I must leave you for the present, and for three reasons."

"You can go to the devil with your reasons!" the Chief shouted.

Mac strolled down the steps without a word. Reaching the sidewalk he turned.

"Vera," he said, "take your father indoors and send him to bed before he catches another blister. If he gets worse, try a hot mustard poultice on his back."

CHAPTER VIII

In The Dragon's Den

"MR. JEVIC is expecting you, Mr. Ferguson. Come this way, please."

The crisp secretary turned and preceded the party down the malachite and rose marble corridor of the Consolidated Power Company's general offices. Her brisk pace gave them but little opportunity to appreciate the massive splendor about them, but even in that short three minutes' walk they shrank within themselves, oppressed by the wanton, barbaric display of gross wealth and insolent power.

"This lady is your daughter, Mr. Ferguson?" she asked, pausing at the gigantic portal which terminated the corridor. The Chief nodded.

"And this is my assistant, Mr. Alan Cunningham."

The secretary was about to press a button when the Chief stopped her.

"Please do not announce us for a minute or two. We should like to glance at this famous door of which the artistic world speaks so highly. There is not another like it in the Western Hemisphere?"

"Nor in the Eastern either, so far as we know," replied the businesslike secretary, relaxing for a moment in pride at her employer's opulence. "It is

unique. Mr. Jevic's agents spent seven years looking for something appropriate before they discovered this. It was just what he wished. A party of explorers got word of it by accident. Later an expedition which Mr. Jevic personally organized, rescued it from decay in the silt and rubbish of the central Chinese desert. It cost——"

No one listened to the figure she named, for all were absorbed in examining the door. Evidently of solid bronze, it was green with age, harmonizing perfectly with the rich green and soft rose of the pillored corridor. From its huge size and strength it might have been the main gate of some long-forgotten city.

"Take a good look at the design, Alan," said the Chief. "I doubt whether you will find exactly the same idea in any other specimen of oriental art. The dragon is always represented as a sacred sort of beast, signifying universal energy or something akin, I believe, and therefore not to be attacked by common people. But that great, clawing brute on the door is having the fight of his immortal life. You can almost see him squirm his coils aside to edge away from that dangerous pike which the hero is brandishing so recklessly. What do you think, Vera, will the dragon absorb the hero, pike and all, or will a mere mannikin get the better of the overgrown worm?"

"If it were a sporting event I should bet on the dragon. But as a human being of course I am bound to back the hero." Going closer to the design she gazed up at the warrior's face. Almost immediately she gave a slight but perceptible start. "Why," she

exclaimed, turning to her father, "that man's face is English or American. There is not a single touch of the oriental anywhere about his expression. His features might have been idealized from yours or Wills'. Or," she added, after a closer scrutiny of the wonderful bronze, "from David's. I know now what it is in that face that is common to all of you," she exclaimed, "but in varying degrees. David has it the strongest. It is the look of sheer intellect that everyone notices in the portraits of Newton, especially in those of him as a young man. Do you suppose this design is a forgery?"

"It is not impossible," the Chief murmured, so that the secretary should not overhear. "Jevic is a strange customer in many ways. He idolizes Newton, yet I hardly think he intended to convey the obvious parable of intellect conquering brute force in this design. You may announce us now, Miss——"

"Adams," said the efficient secretary, once more the feminine incarnation of business. With a strangely complicated series of shorts and longs she pressed a button, under which a neat gold plate bore the simple legend.

BORIS JEVIC

PRIVATE LABORATORY

The massive bronze slid noiselessly back in its grooves.

"Mr. Ferguson, Miss Ferguson, and Mr. Cunningham," Miss Adams announced, and withdrew. The door closed without a sound behind her. They were

in the dragon's den. Their surprise must have been audible, for Jevic's thunderous laugh echoed down to them from the far recesses of the vast room.

"Not exactly what you expected, is it, Ferguson?" His rumbling question followed the laugh like the echo of distant thunder.

It was not. Nowhere was there a vestige of scientific apparatus in the vast hall; not so much as a coil of wire lent an everyday touch of scientific reality to the riot of oriental luxury before them. The rich silken rugs, the gold and crimson embroideries of the hangings, the cool green jade of the grotesque images and groups disposed in artistic disorder up and down the vast though perfectly proportioned chamber, the heavy fragrance of some over-sweet incense that cloyed the warm air, the subdued greenish light softening the outlines of jade and ebony, and blending the clash of many colors into some sort of harmony, all might have formed a suitable frame for some effeminate Eastern prince. But in what professed to be the private laboratory of an acknowledged chieftain in the ranks of science, these barbarous evidences of wealth running riot with art had all the force and sting of a deliberately planned insult.

"Could I trouble you to come this way, Ferguson? I am feeling my age this morning. Your daughter, I know, will pardon me for not rising."

If Jevic was indeed suddenly so enfeebled as he pretended, his voice gave little indication of his weakness. It filled the room like the modulated bellow of a bull.

"Another of his little tricks," the Chief whispered. "Take your time. Let him have a good stare at us, and we'll return the rudeness."

Slowly enough they sauntered to the long ebony table at the far end of the laboratory. The musical splashing of a small drinking fountain under the high south windows was the only sound that broke the somewhat uncanny silence. Jevic, reclining on a magnificent tiger skin flung carelessly over a low settee of ivory and jade, faced them. Never once had he shifted his eyes from them as they advanced. When they were about twenty feet from his table, he sat up. As if by accident his right hand fell on a neat pile of manuscript, while his left strayed absently to a small bronze image of Confucius. Somehow they got the impression that he wished them to notice his actions. The image was a perfect example of Chinese art at its best. Beyond its evident costliness, however, they failed to appreciate his motive in calling their attention to it. He read their thoughts as though they had spoken.

"The sage is my greatest comforter in the lonely hours," he said with a cynical smile. "He was the first great humanitarian. You, Ferguson, are the last." He seemed to enjoy his ponderous joke.

Cunningham determined to make him stand up, and to do so in a hurry, too.

"I am sorry to see you looking so ill, Mr. Jevic," he said. "Doctor Brande was evidently right. You must have been coming down with this blister disease when you were over at our shop."

The reclining man was off his tiger skin in one bounce, bellowing. Vera instantly brought him down again.

"Oh, Mr. Jevic," she exclaimed, "do be careful! You mustn't shout like that at your age; it's dangerous. The blood rushing to your neck may bring on apoplexy."

For a moment they feared an outburst of savage anger. The man plainly was not quite himself. Physically he seemed as sound as ever, a man of seventy-nine with the physique of an athlete of forty. But there was a repressed fierceness, an inhibited savagery about his aspect that made them wish the door were open. Again they had that uncomfortable feeling, which had also disturbed Brande, that this giant in body and mind was not wholly sane. Surely their jests, even if unpardonably ill-bred, could not alone have worked him into his present frenzy. To control himself he was putting forth every ounce of his strength and will. The massive hands clenched on the table before him, the great veins swelled like cords in his bull neck, and his black eyes became inexpressibly cruel, narrowing evilly.

Ferguson looked on at first indifferently, then with growing alarm.

"Jevic," he said, "let me fetch someone. Where's the bell? You're ill, man!"

But whatever it was that ailed him, passed suddenly, or else he controlled it. When he answered, it was in his natural voice.

"Thanks, Ferguson. It's nothing. Nerves. I had a

spell like it last night. The first time in my life I've ever felt like anything but a healthy ox. Overwork, I expect. Some of my staff has been giving a little trouble, and I'm not used to being balked. So I have stuck to my table too long."

"I'm awfully sorry that I made that nasty remark, Mr. Jevic," said Vera with deep contrition. "It meant nothing, I assure you."

"Same here!" said Cunningham. "You look as fit as you did the other day. I was only joking. Brande doesn't know what he is talking about."

"That's all right," he assured them genially. "My nervousness is completely gone. Honestly, do I look all right?"

"You do!" they chorused.

"Then let me show you some of my curios," he said with a smile, rising. "There are some jade carvings at the farther end of the room which I think will interest you, Miss Ferguson."

"I would much rather see something else, if I may," she begged.

"You have but to name it."

"Your red shirt!"

He flung back his head, bellowing with laughter. But it was a deep, hearty shout. Vera's request had been a masterpiece of diplomacy.

"This way, then!" he said, leading them toward the north end of the long room. At that end the green marble wall displayed but a single ornament. Under the high, deep-set windows hung a magnificent scarlet and gold silk embroidery, a masterpiece of Chinese

needlecraft. The intricate design, at first not obvious, resolved itself on their closer approach into a replica of the dragon and warrior on the door.

Stepping up to the splendid hanging, Jevic with a deft movement pulled a tassel, and the drapery parted. His act was that of an academician unveiling the masterpiece at an exhibition of paintings.

"There it hangs," he said, pointing proudly to the common red flannel shirt dingy with age, "on the identical nail by which it used to hang in my lodgings when I was a digger of ditches."

"And the rest of your victory costume," Alan asked; "where do you keep that?"

"In that safe," he answered, nodding toward a massive bronze likeness of the dragon and warrior.

"Aren't you afraid that some thief will break in and steal your shirt?" asked Vera with a sly smile.

He laughed. "Samson and Hercules together could not break that door. And it is a sheer drop of eighty feet from those windows to the ground."

"You certainly take good care of your treasures, Mr. Jevic."

"I do. Not that the shirt would tempt anyone. But there are other treasures in those safes," he indicated a row of wonderfully carved doors along the east wall, "that all the wealth of the world could not buy."

"Dear me! Gems?"

"No. Calculations! My life's work."

"Mr. Jevic," said Vera with mock seriousness, "you really should take better care of your valuables. What are paltry locks on a bronze door or combinations

on a safe to real genius? Why, there are apprentices in our laboratory who could pick any lock made, and do it in their sleep. Then too, you know, that every mechanic uses appliances that would melt that door like a pat of butter. Only," she concluded, "they might be observed in the process. On the whole, I think the old-fashioned way of just picking the locks would be the most efficient in this case."

To the delight of the others he took her seriously.

"It would take more than genius to enter this room. I have provided against burglary of the highest order. That door is nothing less than one huge lock operated by a unique device of thirty-seven interlocking combinations, each of which can be varied at will. At a correct pressure of the button that door opens like a book; lacking the combination you could not budge it an inch with the highest explosive. The exterior only is bronze. The interior is titanite of a special temper, which once poured and set, will defy any mechanical torch made.

"Once in this little den I but seldom leave it until the day's work is finished. And whenever I do venture out, if only for five minutes, I change the combination on the door."

Ferguson left the discussion in order to examine a teak-wood screen at the other end of the room.

"But," Vera replied, with a provoking smile at Cunningham, "your secretary, Miss Adams, knows the combination, for she let us in. Now, Mr. Jevic, are you sure that you can trust her? I know that Alan would, but then he is so young."

"Miss Adams," he answered with evident pride, "is an incorruptible as gold. I know, for I have tested her—without her knowledge. Besides," he added with a short laugh, "she knows nothing whatever of mathematics beyond bookkeeping and accounting."

"Still, she might give the combination away to somebody who did know the value of your work. To me, for instance, and I could pass it on to David; he certainly would make good use of it. Just think, if he were to get in here with one of our ingenious young mechanics, what a glorious hour he would have skimming the cream off those safes while you were absorbed in your calculations, or perhaps taking a nap. For you do sleep sometimes like an ordinary mortal, Mr. Jevic?"

"Often," he admitted with a humorous twinkle of his black eyes. "In fact Chung, my personal servant, tells me in his quaint, outspoken way that I snore like a porpoise. But your scheme, I fear, wouldn't work. Over every safe stands a guard that no amount of money could buy. For each guard, no bigger than your little finger, is quite without self-respect or scruples of any kind. Whoever collides with one of my faithful watchmen is likely to get a nasty jar."

Vera sighed. "Then Miss Adams is the only weak spot in your armor. I shall have to get Alan to see how much temptation she can resist."

"You are mistaken, Miss Ferguson. If you count my secretary a weak spot, there are several others. In fact five: Werner, Utterson, DeLong, Grant, and Chung my faithful servant and friend. Each of these

men has free access to this room while I am present. Each of them is above suspicion. Each of them—yes, even Chung in his own way—has devoted the best years of his life and all of his genius to the upbuilding of Consolidated Power. Its strength and prosperity are identical with their own. And as these men have frequently to consult me, and as I can trust them, every morning my secretary gives them the new combination for the day. Whenever it is necessary to change the combination during the day, these men are acquainted by me with the new one. Thus we guard against all carelessness, even the least malicious."

"You will be a hard nut to crack, Mr. Jevic," Vera sighed. "But somewhere in our laboratory I'm sure we shall find the right nutcracker."

"You are welcome to try it!"

"Thank you so much! Now I shan't feel like a common thief when I'm making off with the very choicest of your treasures. Shall we sit down now and talk over the business proposal you intend making us? You spoke the other day as if it were something really tempting."

"Delighted," he answered with a satisfied smile. "Over here please. I always talk better at my work table."

CHAPTER IX

A Handsome Offer

"NOW let us proceed to business," said Jevic, seating himself to the best advantage on his gorgeous tiger skin. The Chief nodded.

"We shall be delighted to do so," Vera answered promptly. "That is why we are here, isn't it?" She smiled sweetly at the colossus.

"Your father's daughter, I perceive," he said. "Excuse me a moment while I run through these? I never make a business proposal without freshly renewing the entire matter in my mind."

The Chief nodded again, and Jevic plunged at once into the notes before him. At least he appeared to be devoting all of his attention to the mass of figures which he scanned with amazing rapidity; but all the time the visitors felt that here was only another ruse, an opportunity to impress them with his magnificence or to wear down their patience and so gain his object the more easily. How the Chief was taking it could only be guessed. Vera, like Alan, openly watched Jevic's every movement, studying his tactics as under a microscope.

The result of Vera's inspection seemed to gratify her. Once or twice she smiled slightly, and once, Alan

thought, bit her lip to restrain a laugh as the Colossus of Consolidated Power, frowning intently, drew a begemmed pencil from his pocket and scribbled a brief note on the margin of his manuscript. Cunningham's impression was less pleasing than apparently was hers. He saw little to inspire mirth in the gross spectacle of Boris Jevic matching his brute strength against his Chief's all but worn-out frame. Not that he for a moment doubted Ferguson's ability to hold his own. But there was something so revoltingly brutal about their enemy's determined vitality that he felt an instinctive disgust at the prospect of a clean man being forced to cross swords with the gross and physically stupendous animal before them.

Bull-necked, purposeful, opulent in the most repulsive manner, he squatted there like a crude image of wealth at its worst, radiating in every movement power and contempt for everything that power cannot subjugate or wealth buy. Infinitely more powerful than any mere money king had ever been, for he possessed, in addition to the instinct for breeding money on money, a scientific intelligence of the very highest order, he sat before them, gloating as he shuffled his papers for the fifth time, an object to be feared but not ridiculed. Vera might smile, but the Chief knew, Alan felt sure, that here was a dangerous animal gifted with almost superhuman intelligence, one that must be exterminated at any cost, even at that of his own life. In Jevic he saw the world's last despot. Whether Jevic should reach the pinnacle of his ambition, and finally grasp the levers of universal gov-

ernment, would probably be decided within the year. The decision might even hang on their action during the coming hour.

Jevic put aside his papers and looked up. The Chief did not force him to speak first, but took the bull by the horns, speaking out openly all that he felt.

"Jevic," he said, "before you make your offer I wish you to understand exactly what are my sentiments toward you and everything that you represent."

Jevic smiled good-naturedly, almost as one might smile at a spoilt boy. "I think I know how you feel," he answered. "However, it may clear your mind if you give vent to your emotions. Then you will see how advantageous to your side my little offer is. I am a tyrant, am I not?"

"Worse! The word has not yet been coined to express what you are. The tyrants we read about were shrewd men with a knowledge of how to handle men through their greeds or fears and prejudices. That gift is but the least of all yours. Later came the money kings; incompetent also. You have all that they had, and more. It is the infinitely more than that which any of these had which makes you what you are. To say that any of these past misrulers of the world had intellect is to abuse words. They had cunning, ability, greed, a knowledge of the human animal as a highly efficient lust and hunger machine, but beyond that nothing, not one spark of intellect. Divine right was the strength and finally the undoing of the kings. Brains took the place of divine right in the money rulers. But they made one mistake which proved fatal.

It was the mistake, Jevic, which your first employer made. They thought that by paying men their price, they could hire what brains they needed in their business, and so supply their own lack of the one essential to world power. They bought other men's brains, and the other men's brains wrecked them.

"The war road to universal power has been blocked for three-quarters of a century. Science at last has made war a science, in making it perfect. Whoever now, nation or individual, ventures out on the war road to world power, courts instant annihilation. Only one way remains open, and that way you have taken. You have combined a scientific intelligence of the very first order with the unscrupulous commercial instincts of a past era. You hire brains, it is true; but your own intellect immeasurably overtops all that are now your slaves.

"Legislation is always a year behind you. If one monopoly is broken up or made unprofitable by public ownership, you and your staff enter into competition with your own Corporation, and in a few months render the disputed product obsolete and useless. By the time our inexpert legislators have caught up with you, you have another answer ready. And so it goes."

"All due, my dear Ferguson, to the little oversight of which the first International Council was guilty exactly forty-five years ago. With the reckless zeal of fanatical reformers, they nationalized and internationalized everything in sight—except science. It was before I was in a position to do anything, of course, but had I been in action then, I should have joined

the other gentlemen of science in their fight for recognition. But the earnest reformers were so taken up with providing food and clothing for all alike that they overlooked the trifle of brains. And the best of it is that all the unpleasantness which has resulted from that little slip might have been avoided at practically no expense. All that the scientific workers asked for was a decent living wage and the opportunity to pursue their investigations for the benefit of humanity on a scale in keeping with their importance. But the warm coat and the hot dinner won the day. Then, shortly afterward, the world got me in my red shirt," he concluded with a laugh. "My intentions, Ferguson, as I told you the other day, are quite of the best. I simply wish to remedy that little mistake committed by the International Council."

"You lie, Jevic!" said Ferguson, quietly.

"Father! I'll take you home and put you to bed. Mr. Jevic, please name your bribe. If it is fat enough, I know that father will accept. Now bid as high as you like."

"That is rude but sensible, Miss Ferguson." He once more glanced at his papers. "I shall name the bribe as you please to call my offer. On one condition, my Corporation will grant James Ferguson and his chief associates, or their heirs, a perpetual interest of one-third of the net annual earnings of Consolidated Power."

"And the condition?" asked the Chief.

"That all your past and future discoveries, inventions and patents having any bearing whatever on the

problem of releasing and controlling the energy in atoms, become the absolute property of the World Consolidated Power Corporation. Take your time, Ferguson. Think over the offer, and either accept or reject it with your eyes open. Your share would run well into the tens of billions."

CHAPTER X

A Declaration of War

JEVIC leaned back on the tiger skin, evidently well satisfied with the astonishment on their faces. Did the Chief remember MacRobert's advice not to reject any offer on the spur of the moment? Was he tempted by this chance to wreck the Corporation from within, or was the chance too remote? He looked up, squarely at Jevic.

"It is not enough," he said.

"Not enough?" echoed the Colossus of Consolidated Power. He seemed taken somewhat aback. "What would you consider a fair offer, Ferguson?"

"Well, say a fraction more than a third of the net annual proceeds, the increase also to continue indefinitely, you understand."

Jevic beamed. "I appreciate your business acumen. Doubtless the matter can be arranged to our mutual satisfaction. Now, would a bonus of ten per cent. on the net earnings of our Chinese branches over and above the one-third already agreed upon, meet your wishes?"

"It would not," The Chief replied. "We ask a little more than that."

"Then name your price!" said Jevic cordially. "Consolidated Power is too large and generous a body

to haggle over such minor details as an extra bonus or two in affairs of this magnitude. Come now, Ferguson, what is your figure?"

"Fifty-one per cent. of the entire present stock of Consolidated Power, plus fifty-one per cent. of all stock to be issued by the Corporation in future."

An evil gleam flashed from Jevic's narrowed black eyes. "So nothing less than the controlling interest will content you?"

"Your penetration is amazing," the Chief replied. "Over at our shop we have no desire to see our grandchildren sweating their hearts out in slavery."

Jevic sprang to his feet, and paced quickly up and down the length of the table between them, his hands behind his back, the strong massive head bowed in concentrated thought. The contrast between his restless energy, almost brutal in its intensity, and the Chief's calm self possession might have satisfied a casual observer. It seemed to satisfy Vera. She glanced from one to the other, smiling happily. But to Cunningham the contrast was far from reassuring. Ferguson looked like a tired-out man of over sixty, Jevic like a vigorous giant of less than forty. What if the pursuit of the great secret, whose possession would give its owner the control of the world, should develop into a struggle between these two men, a race to be won by sheer endurance for five or six years, or, as Jevic declared, for as many months? Would it not have been wiser of Ferguson to have accepted the offer, trusting to the ability of his staff later to point the way for checkmating Consolidated? Once within

the enemy's camp, surely the means of destroying him would be found readily enough. Perhaps something of the same idea was passing through Jevic's mind. His face took on a crafty, singularly Mongolian expression. Suddenly he paused, leaned over the table to Ferguson and shot out a question.

"Suppose I accept your terms, what will you do to Consolidated?"

"Wreck it," quietly answered the Chief.

Jevic's face betrayed unbelieving astonishment. "Wreck the Corporation? What on earth for?"

"Because it is the last and rottenest of the corporations. It is the sole survivor. The small concerns calling themselves independent corporations exist only in name. You own or control them all. Do you understand?"

Jevic began thrashing back and forth again.

"You have named your terms. Remember, you named them, not I. I am not sure that the Corporation cannot best gain its ends by accepting. Let me consider."

"Do sit down again, Mr. Jevic, please," Vera interrupted with a trace of asperity. "You remind me of Goliath, towering there while we sit. We cannot possibly come to terms in this high-strung state of nerves. Please sit down."

Jevic subsided with a gasp, but he was still thinking furiously.

"I might still give you the controlling interest and gain my end. You, apparently do not see how. I do. If the controlling interest is all that you want, I'm not

sure that you may not have it. First, how do you propose to wreck the Corporation? It is the strongest organization that this world has ever known, excepting none."

The Chief laughed. "It will be too easy. Don't you see, Jevic?"

"I confess that I do not."

"Then first let me tell you that I am not quite so blind to your precious scheme. You plan, with the help of our experimental skill, to steal the secret of atomic energy for your own individual use. An hour's start in the actual possession of the secret will be all that you will require to gain the upper hand. Then our controlling interest will be worth, perhaps, ten cents. For all of your present plants will be fit only for scrapping. And resistance? We should not be quite such fools as that. You will have the world in the palm of your hand. Nations or individuals defying the first possessor of the new energy will but court inevitable annihilation. There will be no provision whatever for self-defense against the man with an hour's start, if he be inclined to abuse his knowledge. In half an hour, sitting at this table, you might, if you so chose, ruin the world. We know enough about the probable action of the new energy and its directed control through space to know that. Now, Jevic, wasn't it something of this sort that you had in mind a moment ago?"

"If it was—and I'm not admitting it, mind you—how could you wreck the Corporation so as to prevent me doing what you forecast?"

"By dissolving it in water."

"Ferguson, you are either ill or joking."

"Neither. With the controlling interest in my hands I should immediately swell the capital stock to about two thousand million shares. Then I would present every man, woman and child on the globe with one share and see that a law was passed making the possession or manipulation of more than one share a capital offense. It would be easy then to head you off on your pretty scheme which you refuse to acknowledge. I should ask the scientific societies, unions and governments of the world to appoint delegates to our little conferences over the problem itself. And as each step toward the solution was taken, in the presence of the delegates or a committee chosen by them, the results should be published broadcast to the world. Now Jevic, what about it? Do you offer me the controlling interest if I promise to let loose our best experimenters on your calculations? Yes or no?"

"Don't be in such a hurry, Ferguson. How do you know that you are not exaggerating the dangers of the problem, or rather of its solution? Let us forget the commercial side for a moment, and look at the other. Then we shall be better able to come to some rational agreement. Now, as man to man, I wish to ask you one or two questions bearing on the problem itself. Never mind my reasons for seeking information from you. If they are not clear to you now, they may become so in a day or two when you have had time to think over things. You do not need to answer unless you wish. But frankly, it will be better for yourself,

for me, and for the whole world if you give me straightforward answers to a few simple questions."

"Why all this mystery, Mr. Jevic," Vera asked curiously. "Have you been burning your fingers lately?"

"I can tell you nothing more definitely, Miss Ferguson, although I gladly would if I were able. But I do not indulge in guesses."

"Go ahead, Jevic," said the Chief; "I'll either tell you everything that I know or nothing."

"From a remark which you dropped a few minutes ago, I see that you anticipate the directed transmission of the new energy through space. When we have finally smashed the atom, we shall be able to transmit its internal energy without wires when and whither we wish. What part of the process of breaking up the atom do you consider of the greatest importance? Speed in transforming the matter into energy is of course of the first importance, but what else?"

"Complete control of the entire process. Through blind haste or imperfect knowledge, through a slip at some stage of the process of transmutation, a bungling operator would be almost certain to start a catastrophe that would wreck not only this world, but the universe."

Jevic leaned back, breathing heavily. "Of course there is terrible danger in the whole project. I realize that. But once a false step were taken, don't you think it might be recovered?"

"I have no idea. Only I hope that nobody will be fool enough to blunder in the first place."

"Can you give me an idea, from the experimentalist's side, what this catastrophe that you speak of might be like? My own work indicates something pretty bad, but I wish to check up by an independent opinion."

"Your question can be answered in one word. Annihilation."

"Literally?"

"Of course. This table, for instance, would simply cease to exist. There would be no dust, no ash, nothing of that sort in its place; just a plain hole in the air and nothing under it."

"That checks with my own work. My calculations show that we may expect an absolute void wherever there was matter, if the process should go wrong."

"I am glad you realize it, Jevic. The first stage in transforming the atom into energy will be the most dangerous. Before we set free atomic energy, we must destroy the atom. Or perhaps we must go even farther, and annihilate the electron, as a constituent of matter, that is, transforming it into free energy. This, of course, is merely summing up the whole story. Before we can create we must destroy. And the danger lies in our not being able to control the destruction once we have started it. Now, Jevic, I have spoken frankly, because I consider that the time for concealments and half-truths between us is past. I do not know what you have been doing during the past few days, nor do I wish to know. You say that you are within six months of solving the problem. Possibly you may be closer to the answer than even you think. The solu-

tion, for all that I know, may be in your papers at this moment. But if my advice counts for anything with you, take care that you do not stumble upon a universal dissolution, instead of upon the ingenious solution which you imagine that you have discovered."

Jevic made no reply. In fact his face was as nearly a perfect blank as was possible for it to become. Vera spoke, breaking the uncomfortable silence.

"If you are so near the solution, Mr. Jevic, why should you be willing to grant us, your competitors if not actually your enemies, so generous a share in the profits? Even now you are hesitating whether to grant us the controlling interest."

He looked up, and for a moment his face was haggard.

"I have been working incessantly, Miss Ferguson, trying to determine the initial value of a certain arbitrary constant. It is the one factor still lacking for my complete success. Never before has any point in my researches given me so much trouble. It slips through my grasp as if my fingers were made of sand. And I don't mind confessing that I thought perhaps an experimental attack on the whole question so far cleared up by the rest of my work might show me also this. The thing has got on my nerves. I can't sleep. All the rest I have been getting for the past four days has been a succession of five minute dozes made hideous by unimaginable nightmares. I live through the actual dissolution of all things that your father half threatens, half predicts. To a man who has enjoyed the perfect brute health that I have for seventy-

nine years, this first inkling of sickness is excruciating torture. Unless the tension is quickly released, something must snap. Now, Ferguson, will you take nothing less than the controlling interest?"

"Nothing less. That's final."

Jevic sighed. "I am sorry," he said simply. "But even to gain peace, I cannot bring myself to wreck the work of a lifetime. It shall stand or fall with me."

"I am sorry, too, Mr. Jevic," said Vera. "Hang your miserable red shirt!"

He smiled kindly at her, but made no reply. For several minutes he sat thinking, and none of them ventured to disturb him. At last he shot out a question. Its unexpectedness brought Vera and the Chief to their feet.

"Does young MacRobert know that he is playing with hell fire?"

"What do you mean?" Vera gasped, her face as white as paper.

"You know what I mean, Miss Ferguson. I gave in yesterday when I did to stop MacRobert's folly. It was not the destruction of two and a half billion dollars worth of our property that brought me down. Far from it!"

"Then what made you cut the Russian rates?"

"The knowledge, Miss Ferguson, that my weapons are not for children to play with. Pray be seated again, while I give you a little well-meant advice."

Vera and the Chief resumed their chairs, and Jevic continued impressively.

"If you have any influence over your young friend

MacRobert, kindly exert it at once. I am aware that he is a stubborn young man. But you, Miss Ferguson, possess visible attractions which I lack."

"Very clever, Mr. Jevic," Vera retorted coolly. "But it is not quite clever enough. First, David is not a baby. As a mathematician he is at least your equal, and you know it. Second, he knows exactly what he is doing and what risks he runs. Third, he holds no fantastic theories that his calculations work by themselves, as you claim for yours. He tests his theories by experiments. Fourth and last, your bluff won't go. It is too obvious."

Jevic shrugged his huge shoulders.

"Very well," he said, reaching for a faded green volume on his table. "You know MacRobert better than I. Let us talk of something pleasanter."

Vera's eyes flashed dangerously, but Jevic apparently did not notice his blunder.

"Have you a taste for history, Miss Ferguson?"

"For the history of science," she admitted.

"That is what I meant. The other kind is unimportant in the present state of civilization. It is mostly a biography of nobodies and a museum of their stupidities. We may be thankful that it is no longer studied save in the medical schools. This volume is from my collection of early works on the history of science. It is by an old-time physicist, Frederick Soddy. The title is *The Interpretation of Radium.* The date on the title page is 1909—before I was born. Nevertheless, as Soddy was considered a big man in his day, and as some of his speculations are suggestive in view

of our recent discussion, I shall read you a very short passage from his most interesting book. When you have heard the passage, you may appreciate why Soddy's contemporaries smiled him into a professorship in a third-rate university—Glasgow or Aberdeen, I believe it was, and, later, even worse, Oxford. Remember that he wrote in 1909."

Jevic opened the curious old green volume, and read aloud the following passage:

" 'Surveying the long chequered, but on the whole continuous ascent of man from primaeval conditions to the summit of his present-day powers, what has it all been but a fight with Nature for energy—for that ordinary physical energy of which we have said so much? . . . The struggle for existence is at the bottom a continuous struggle for fresh physical energy. . . . The aboriginal savage, ignorant of agriculture and of the means of kindling fire, perished from cold and hunger unless he subsisted as a beast of prey and succeeded in plundering and devouring other animals. Although the potentialities of warmth and food existed all around him, and must have been known to him from natural processes, he knew not yet how to use them for his own purposes. It is much the same today. With all our civilization we still subsist, struggling among ourselves for a sufficiency of the limited supply of physical energy available, while all around are vast potentialities of the means of sustenance, we know of from naturally occurring processes, but do not yet know how to use or control. Radium has taught us that there is no limit to the amount of

energy in the world available to support life, save only the limit imposed by the boundaries of knowledge. . . .

" 'By these achievements of experimental science Man's inheritance has been increased, his aspirations have been uplifted, and his destiny has been ennobled beyond our present power to foretell. . . . It is a legitimate aspiration to believe that one day Man will attain the power to regulate for his own purposes the primary fountains of energy which Nature now so jealously conserves for the future. The fulfilment of this aspiration is, no doubt, far off. . . .

" 'It is curious how strangely some of the old myths and legends about matter and man appear in the light of our recent knowledge. Consider, for example, the ancient mystic symbol of matter, known as Ouroboros—"the tail devourer"—which was a serpent, coiled into a circle with the head devouring the tail, and bearing the central motto "The whole is one." This symbolizes evolution, moreover it is evolution in a cycle—the latest possibility—and stranger still it is evolution of matter—again the very latest aspect of evolution—the existence of which was strenuously denied by Clerk Maxwell and others of only last (the Nineteenth) century. The idea which arises in one's mind as the most attractive and consistent explanation of the universe in the light of present knowledge, is perhaps that matter is breaking down, and its energy being evolved and degraded in one part of a cycle of evolution, and in another part still unknown to us, the matter is being built up again with the utilization

of the waste energy. The consequence would be that, in spite of the incessant changes, an equilibrium condition would result, and continue indefinitely. If one wished to symbolize such an idea, in what better way could it be done than by the ancient tail-devouring serpent?

" 'Some of the beliefs and legends which have come down to us from antiquity are so universal and deep-rooted that we are accustomed to consider them almost as old as the race itself. One is tempted to inquire how far the unsuspected aptness of some of these beliefs and sayings to the point of view so recently disclosed is the result of mere chance or coincidence, and how far it may be evidence of a wholly unknown and unsuspected ancient civilization of which all other relic has disappeared. It is curious to reflect, for example, upon the remarkable legend of the philosopher's stone, one of the oldest and most universal beliefs, the origin of which, however far back we penetrate into the records of the past, we do not seem to be able to trace to its source. The philosopher's stone was accredited the power not only of transmuting the metals, but of acting *as the elixir of life*. Now, whatever the origin of this apparently meaningless jumble of ideas may have been, it is really a perfect and but very slightly allegorical expression of the actual present views we hold today. It does not require much effort of the imagination to see in energy the life of the physical universe, and the key to the primary fountains of the physical life of the universe today is known to be transmutation.

Was then this old association of the power of transmutation with the elixir of life merely a coincidence? I prefer to believe it may be an echo from one of many previous epochs in the unrecorded history of the world, of an age of men who have trod before the road we are treading today, in a past possibly so remote that even the very atoms of its civilization literally have had time to disintegrate.

" 'Let us give the imagination a moment's further free scope in this direction, however, before closing. What if this point of view that has now suggested itself is true, and we may trust ourselves to the slender foundation afforded by the traditions and superstitions which have been handed down to us from a prehistoric time? Can we not read into them some justification for the belief that some forgotten race of men attained not only to the knowledge we have so recently won, but also to the power that is not yet ours? Science has reconstructed the story of the past as one of a continuous Ascent of Man to the present-day level of his powers. In face of the circumstantial evidence existing of this steady upward progress of the race, the traditional view of the Fall of Man from a higher former state has come to be more and more difficult to understand. From our new standpoint the two points of view are by no means so irreconcilable as they appeared. A race which could transmute matter would have little need to earn its bread by the sweat of its brow. If we can judge by what our engineers accomplish with their comparatively restricted supplies of energy, such a race could trans-

form a desert continent, thaw the frozen poles, and make the whole world one smiling Garden of Eden. Possibly they could explore the outer realms of space, emigrating to more favorable worlds as the superfluous today emigrate to more favorable continents. One can see also that such dominance may well have been short-lived. By a single mistake, the relative positions of Nature and man as servant and master would, as now, become reversed, but with infinitely more disastrous consequences, so that even the whole world might be plunged back again under the undisputed sway of Nature, to begin once more its upward toilsome journey through the ages. The legend of the Fall of Man possibly may indeed be the story of such a past calamity.' "

Closing the volume, Jevic reverently laid it aside. "Soddy was a dreamer," he remarked quietly. "And dreams sometimes come true."

"Also nightmares," the Chief murmured.

"True. Another of these old fellows whom I dipped into the other day imagined a very pretty sort of nightmare. He prophesied that breaking up the atom by artificial means would be like playing with a house of cards. Take out one card from your pasteboard foundations, and the whole toy house comes clattering down on the table. The house he compared to the material universe. Taking out the essential card from the foundations is equivalent to opening the atom in a clumsy way. The falling down of the house is the progressive wave or pulse of destruction spreading instantaneously through the universe, obliterating

suns and stars and nebulae in one flash of blinding ruin."

"And the table on which the cards come clattering down," Cunningham asked, "how did he analogize that?"

"There will be no table in this case, no solid bottom on which to fall. Only a bottomless abyss of sheer void. We shall tumble into that, as dreams flee down the wells of darkness when the sun rises and the mind wakens."

He thought for some seconds in silence. With an effort he roused himself.

"Well, Ferguson," he said with half a sigh, "how about it? Your decision is final? I hope not. For the last time I ask you, will the Independent Laboratories combine with Consolidated in solving the great problem? The unrivalled experimental skill of your staff working on the infallible clues which exist in my calculations will determine the initial value of that elusive arbitrary constant, and give us the complete solution within three months. Then indeed shall we see once more the world's golden age, when men can cease their incessant sweating to cover their backs and fill their bellies, and when they shall begin to reach out to their true inheritance, the stars. Thither is where our destinies point us. We have outgrown this narrow world. It is a dream to fire the heart of any humanitarian. What is your answer?"

"No," said the Chief.

Jevic rose. "Then I declare war," he announced.

Ferguson, Vera and Alan also rose to take their departure.

"Goodbye! Mr. Jevic," said Vera, shaking hands with the swarthy giant. "When may we expect the first shot?"

Jevic turned round deliberately and glanced at the old-fashioned clock.

"It is now half-past one. You may expect the first shot in thirty-five minutes. That will be five minutes past two."

Vera smiled. "You are very amusing, Mr. Jevic. Do you know, I am sorry that we part as enemies?"

"Say as friends who disagree, Miss Ferguson," he replied with a low bow. "I too am sorry that we part thus, and for many reasons."

"Your random shooting won't hit me, will it, Mr. Jevic?"

"I would not harm one with your charming sense of the amusing for worlds. No, not for a whole hive of worlds, nor for all the stars in all the nebulae!"

CHAPTER XI

The First Shot

THE great bronze door closed noiselessly behind them. With a subdued chuckle, Ferguson turned and regarded the flamboyant design of the dragon and warrior.

"Well, Vera, which do you back now?" he laughed. "Does that bloated reptile look less venomous than he did?"

"I bet on David MacRobert," she replied, tilting her chin to the fighting angle. "Our friend Jevic in there is going to lose flesh before the summer's out. He and his impassable doors! Impassable fiddlesticks! A clever woman could open that gaudy sardine box with a hairpin."

Her father become suddenly grave and thoughtful. "If only we had David with us," he sighed, turning from the dragon, "we could laugh in Jevic's face."

"Yes," Alan echoed, "if only we could bag MacRobert, the game would be ours. But his infernal Scotch pride and his red-headed obstinacy make him one hundred per cent. temptation-proof. Short of crawling to him on our hands and knees, Wills, Thompson and I have approached him in every way known to science or politics. Mac simply is unap-

proachable. That is the long and the short of it. Now, if Vera were to——"

"You shut up about me," she snapped. "That blonde typist, or secretary or whatever she was, has turned your head and made it softer than ever. You were positively moonstruck and silly all through the conference. Your romantic restlessness wouldn't let you sit still in your chair for two consecutive minutes." Almost on the tips of her toes she preceded the others rapidly to the exit.

"Better not follow too closely," whispered the Chief. "We might get a red, white and blue shock this time."

Reaching the steps they found Vera talking pleasantly to Brande.

"The Doctor followed us, father, to see you about this Health Department flurry."

"Is the new disease getting worse, then?" asked the Chief anxiously.

"We fear so," Brande replied. "The blisters especially are pretty bad. In the cases I have actually seen, the patients might have been badly burned with phosphorus. The strangest part of it is that the blisters, no matter how bad in appearance, are absolutely painless."

"Don't the ray-guards check the disease at all?"

"Lead-actinite and all the rest of the standard fabrics are useless."

"Then the cause of the disease must be something new to science. Of course you have made a bacteriological examination?"

"Of course. No germ is to blame. And no organic poison is present. The disease is new to medical science. But let us forget all this for half an hour or so! Why not walk down to the old electric, and go back to town that way? We can send someone out to bring in the cars. It is a shame to miss such a day as this! Just look at the cool green of the trees and the freshness of the lawns—it all beats early spring."

"And the sky," Vera seconded. "It is my favorite shade of blue, with just a faint tinge of the sunset green up at the zenith. We are with you, Doctor. Step out."

They started briskly down the long straight avenue to the old electric depot. On either hand the broad fields, each a faultlessly kept lawn dotted with giant elms and white oaks, dipped and swelled in fold upon fold of low hills to the far horizon. For thirty miles in all directions from the General Offices stretched a similar park, varied at irregular intervals by landscaping of shrubs and vivid flower beds, with here and there a touch of Nature at her wildest and most beautiful. For this was Jevicville in the days of its prime, the whim of one man gratified in the beauty that wealth can buy. Early in his career Jevic had removed the General Offices of Consolidated from their central position in New York City to the heart of rural New Jersey, erecting there a vast pile of marble and white granite in harmony with the large beauty of its natural surroundings. Disregarding the ridicule of the business world he had taken this step to secure perfect

quiet for his staff in their researches. Within a radius of thirty miles from the General Offices the only buildings were the red tiled white granite "cottages" of the gardeners, and the bronze and marble electric depot whither Ferguson and his party were bound. The investigators and general force at the Offices lived either in the luxurious hotel provided free of charge for their convenience in the East wing, or else commuted to the City.

"You must admit that Consolidated offers attractive temptations to poor young men with brains," said the Chief, surveying the landscape.

"I know one whom it did not tempt," said Vera.

"Several!" the Chief agreed happily. "What about Wills and Thompson? The two best ray men in the country, and Jevic can't get either of them at any price."

"Rustic joys," said the doctor, "appeal to me only in small doses—like the present. Live cows and new-mown hay may be all right in a picture, but personally I prefer a seared steak and a crisp green salad in a restaurant, where the music is good and——"

"The girls pretty," Alan finished for him. He hastily changed the subject.

"Look who's here!" he exclaimed, pointing over the low hills to the left. "Quite idyllic! The ancestor of all the New Jersey mosquitoes. That thing must have risen directly from the main deck of Noah's Ark."

A curious antique relic of a flying machine droned

slowly over the hills, and with incredible sound and fury proceeded to toil up the dazzling sky in a wide corkscrew.

"Why," said Vera, shading her eyes and gazing up, "that is a genuine antique. I wouldn't have missed this for anything. Do you suppose it's the real thing? Where on earth did the man get his petrol?"

"It is exactly like the reproductions of the bombing planes in the histories of the Great War," said Brande. "That curator or whoever he is flying the old buzz-saw must have sat up nights brewing his gas. I suppose there isn't a quart of the natural stuff anywhere in the universe, and nobody any longer has use for the substitutes. Persevering cuss he must be, to say the least."

"It must be the real article," the Chief said. "Nobody would spend money making one like it nowadays."

"Oh, I don't know," said Brande. "An insect like that can't be so very costly."

"Of itself, no. But before you could make another like it, you would have to remodel nine-tenths of the air-service machinery in the world. I guess it's genuine, all right. Probably some curator from the Museum of Arts and Sciences finding out whether the thing really can get its legs off the ground. He seems to be having a good time up there, any way. Well, Doctor, what's the rest of your news? Now is a good time to spring the worst of it; I don't believe in disease when I'm out in the country."

"I wish I could say the same," he muttered. "But

the reports we got this morning from the health offices throughout the country would make a confirmed pessimist of the most cheerful idiot on earth."

Ferguson flared up like a rocket. "Do you mean me?" he demanded.

"Blistered again," said Vera softly. "Go on, Doctor Brande, with your report."

"Your father's attitude is unintelligible to me," he continued stiffly. "These are the facts. The metal workers and mechanics generally throughout the world are on the point of exploding in anarchy over some imaginary abuse. In London they are already threatening violence, swearing that they will destroy all metal machinery if their distress is not relieved within the next twenty-four hours. For some insane reason they blame their tools and the machinery with which they work for the present outbreak. They insist that their nerves are strained to the snapping point. Whatever they mean by that, there certainly is something wrong with them. Not so much physically, in spite of the unaccountable blistering, but mentally. They say—" he hesitated.

"Yes?" the Chief prompted.

"It is absurd, of course, but they insist that electricity or something like it is being poured into their veins and nervous systems. A sort of universal outgush of energy is streaming through the atmosphere around their machines and metal appliances, and surging into and through their nervous systems."

He spoke in a strained voice, as if he himself were on the point of a nervous outbreak. Looking appre-

hensively at the ordinarily cool and self-contained little doctor, Alan noticed the muscles of his face twitching convulsively. He was evidently ill or overwrought. The Chief glanced at him, and spoke gently, as if he were the doctor and Brande the patient.

"What do you wish me to do? I'm not a physician."

"In this case you are. Your reassurance that the idea of pouring electricity into people's veins is absurd would quiet the unrest at once. Everywhere in the world the workers know your scientific reputation and respect your opinion."

"What if the idea isn't so absurd as it seems?"

Brande laughed irritably. "This is no joking matter. In a few hours we may have world anarchy sweeping us back to the beasts. If you will permit me to preach, I consider it your sacred duty to quash this crazy notion that is turning the workers' heads. And I may say," he went on with dignity, "that the Department of Public Health is of the same opinion. It is at their request that I approach you in the matter."

"You mistake father entirely," Vera interposed. "Perhaps he sees more in this than any of us guess. And if you will allow me to preach," she laughed, "you and father must not quarrel, no matter how sorely your blisters distress you. For if you do, I shall be forced to bang your heads together."

"Vera is right," said the Chief, "except about the last. I had no intention of standing in the Department's way. If they think a statement from me will do any good, why they're welcome to anything I can say honestly."

The Doctor brightened. "That will be sufficient. A word from you and the tension will be instantly relieved. Given a reasonable breathing spell, the Department can catch up with its arrears. For we do not deny," he said emphatically, "that there is something very far wrong with the minds of the people. There is a real distress. That is precisely the reason why we cannot tolerate any imaginary sickness at present. Your reassurance is just what we need. A reputation for scientific honesty, Ferguson, goes farther and lives longer than even you think."

"That is just the difficulty. Can't you see what a fix I shall be in if my assurance turns out false?"

The Doctor turned incredulous eyes on Ferguson. "Then you think there may be something in their notion that electricity is being poured into their veins and nerves?"

"Not electricity," the Chief began. "And 'poured' is certainly not the right word to describe what may be happening. But it may possibly be something other than electricity. Only possibly, though; mind that. I don't jump at the first conclusion I see."

"What 'something else'?" queried the Doctor, a note of impatience creeping into his voice.

"Well, it might be——"

Ferguson never finished the sentence. Brande seized him by the arm.

"Good God!" he shouted, "Look there!"

Directly above the road, perhaps a hundred yards from them, a streak of vivid green fire leapt down the sky. Striking the road with a grinding crash it burst

into a thousand fragments. They rushed forward, but when they reached it the wreck was stone cold. The twisted scraps of metal that twenty seconds before had been the engine of the historic bombing plane were fused into shapeless lumps as if by the flame of an electric furnace. Yet they felt strangely cold to the touch, perceptibly colder in fact than the stone of the roadway, shadowed as it was by the dense elms.

Brande, his pocket case already open, was searching the vicinity of the wreck.

"Where is the pilot?" he cried.

Immediately, although realizing its hopelessness, they all took up the search for the unfortunate man. Not a trace of him remained. Brande shut his case and returned it to his pocket.

"Blown to atoms," he said. "Probably his home-made petrol exploded. Well, it was a painless death for the poor fellow. Had he been burned we should have found remains at least of the larger bones."

White from the shock, Vera stood silently regarding the wreckage. Then she remembered. With a low cry, she drew out her watch, and opened it. "Nine minutes past two," she announced. "We have spent about four minutes, a little less, in the search. It took us the few extra seconds to get here. The accident happened at five minutes past two."

"Accident?" Alan repeated, a strange doubt in his mind.

The Chief shook his head and glanced at Vera. "Yes, and no. It is hard to say yet. The wreck is total. We cannot tell whether this was a genuine plane of the

old type controlled by a human pilot, or whether it was a small modern ray-directed machine disguised to resemble the old."

He stopped short, peering at a small metallic object at Cunningham's feet.

"That settles it," he said, pointing to the object. "The machine was genuine, and there must have been a human pilot. The thing at Alan's feet is a part of one of the primitive type wireless telephones that came out in the last years of the Great War. Either this wreck was pure chance, or it was meant as a shot across our bows. Well, whatever it was, it will not stop us."

He attempted to pick up the fragment. It crumbled to powder in his fingers. In quick succession he tested the other fragments. All, except that they were fused as if by intense heat, appeared to be normal lumps of metal.

"Strange," he muttered. "It looks as if the wireless telephone had jammed whatever destroyed the rest of the machine. It was not fused, but rotten instead, like a handful of pulverized rust. Perhaps some sort of interference effect saved and at the same time destroyed it."

"His petrol tanks must have exploded," Brande suggested again.

"There was no explosion," said Vera quietly. "Did anyone hear a report?"

They looked at each other. No one spoke. The mystery of that strange death was only dawning on them. It had been a death in absolute silence, broken only by the crashing of the charred machine on the

compact stones of the road. Now that they recalled the actual wreck as they had seen it, they remembered no sound whatever but the final crash. Those green flames in the meteor-like descent had been silent.

"The thing flashed down without a sound," said Brande, expressing the common thought. "It should have made a swish and a rush like a flaming rocket."

"And don't forget," Cunningham added, "that the fragments were cold when we reached them. Whatever destroyed that plane, it was not fire."

"No," said the Chief, "nor lightning."

"If Jevic is in any way to blame for this," said Vera, "he shall pay the full price."

Ferguson shook his head. "Don't jump at conclusions. As for Jevic, we are at present more valuable to him alive than dead. Come," he said abruptly. "Back to town as fast as we can go. There is something at work here that we don't understand. Doctor, I imagine that if we can find what killed that poor fellow, we shall at the same time discover the cure for your strange epidemic."

CHAPTER XII

The Light in the Northern Skies

ALMOST exasperating breakdown of the electrical service stranded Ferguson's party for nearly seven hours in the middle of the old Hudson tunnel. The trainmen were sympathetic but helpless. A feeble current trickled through, but not enough to move the cars. Telephone communication was also strangely interrupted, and during the whole time of their imprisonment in that clammy burrow, they could only speculate on the cause of their delay. More than once they blessed Jevic for his cold light. That, being independent of the electrical service, was unaffected.

Having exhausted every pleasant topic of conversation, they lapsed into discreet silence, Brande and Ferguson showing an alarming eagerness to quarrel over every trivial difference of opinion. Vera dozed, and soon the others diplomatically followed her example.

At last, with a jolt the train started, and they were off. Emerging from the tunnel, they passed into the serene beauty of a perfect summer night, moonless and sapphire.

They reached the laboratories just as Trowbridge, the old night watchman, was locking up after the

departure of the last day shift and the arrival of the first regular night workers at ten o'clock. Theirs was a twenty-four hour day in four six-hour shifts. No worker was compelled to quit when his shift was up, and many, the majority in fact, often worked twelve hours with only a short break for lunch. Never for a moment, year in, year out, was work in the laboratories at a standstill, although occasionally for weeks at a time there was a comparative slackness. Yet even in the dullest times there was always sufficient construction of new apparatus or experimental designs for improvements of old patents under way to justify the retention of a full staff the year round. When the work was light, the men loafed; when there was a rush, they strained the last nerve and muscle to put the job through. For in their shop they had solved the problem of employment. From the manual labor of the youngest assistant fresh from college taking his first genuinely practical course in machine design, to the grizzled investigator of international repute testing the claims of rival theories in his private laboratory, the work of all was creative. Each man knew exactly what he was doing, and where he would stand when his job was finished.

"Everything all right, Trowbridge?" the Chief asked, as the old man let them into the electrical laboratories.

"Yes, sir," answered the watchman, doubtfully.

"You seem none too sure of it? What's the matter? Of course the electrical department has been out of commission for the past seven hours—probably a bad

storm brewing. But beyond that, what's up? Any accident?"

"No, Mr. Ferguson. There's nothing the matter, exactly. Only all the men seem so restless and nervous."

"Ah, the weather probably. Everybody will feel better after we've had the thunder storm and a good downpour. Good night."

"Good night, Mr. Ferguson. Take care of yourself." He touched his cap, and Brande, who was casually watching the old man, started.

"Let me see your wrist," he said.

"It's nothing," Trowbridge answered, thrusting his right hand into his pocket and hurrying off.

"What's the matter, Brande?" the Chief asked anxiously. "Has he got it?"

Brande had captured the would-be fugitive, and was scrutinizing an ugly red burn, the size of his hand on old Trowbridge's wrist and forearm.

"Does this pain you much?" he asked.

"Not a bit. If it wasn't for the looks of the thing I shouldn't give a damn how many I had like it."

"That's the first time in your life, I believe, that you ever swore," the Chief remarked with a smile. "Perhaps that's the natural remedy—I feel like it myself all the time now, and yet I'm not blistered. I think you'll be better by tomorrow morning, Trowbridge."

The old man laughed, and the Chief passed on, worried and silent. Brande and Cunningham followed him to the main electrical room, while Vera left them to change her dress.

"Make yourselves comfortable," said the Chief, "while I write a line or two for the Public Health people."

They found chairs and sat down. The Chief at his desk seemed to take an interminable time over his writing, but glancing up presently at the clock, Alan noticed with surprise that they had been in the room barely four minutes. He tried not to look at Brande, but the effort was too much for his will, and their eyes met. They looked hastily away, ashamed of the thought that each read in the other's eyes. At last, unable longer to sit still, they rose and walked together to the farther end of the laboratory. By a common instinct of shame they sought concealment behind a large transformer.

"How do you feel?" Brande whispered.

"Beastly queer," Alan whispered back. "How do you?"

"Queer. I can't express it. I want to shout and yell like mad, but know that if I did I should only feel a worse kind of a fool afterwards. There is something wrong with the air in here. It has a metallic taste."

"Imagination, Brande. It can't be the air. All the windows are open."

He stared up at the north windows as if doubting the assertion.

"Look!" he whispered tensely.

Alan followed his gaze, and saw nothing. He looked sheepish, reddening nervously.

"Too much excitement today," he muttered, and for a moment both of them stood silent, waiting. What

they expected to see, neither of them could have told. But the conviction gripped them that something apparently trivial yet of tremendous import for the human race was about to happen.

"Somebody is trying to tell me something," Brande whispered fiercely. "Whoever it is, is trying to make me look at the northern sky. I won't if I have to put my eyes out!"

"You're nervous, man. Thought transference is rot. You have that idea in your head because you looked once and saw nothing."

For a moment Brande stood peering at Alan's face, and the sweat started out on his forehead. Then, unable to bear the strain longer, his head shot round and up to the north windows.

"Look!" he whispered, clutching Cunningham's arm in a grip of iron; "there it is again."

That time Alan saw it. To men in a normal state of nerves there would have been nothing alarming in the faint, greenish flash that flickered for an instant up the northern sky like the gleam of a brandished sword. But their nerves were strained to the snapping point.

"Well, Doctor, that certainly is one on you. How will you ever have the face to treat nervous disorders after this? That was only a rather poor display of the northern lights."

Alan knew that he lied. But it was a professional lie, such as doctors tell their patients. How could he hint to Brande that that flash was most certainly not a thing of their atmosphere, but a light in the cold

depths of outer space, probably immeasurably beyond the Milky Way? Indeed, he could not have given a logical reason for his absolute certainty that such was a true description of that flickering sword. Yet the same irresistible impulse that had made Brande turn his head, was forcing this conclusion on Alan's mind with a persistence that no logic could shake. And the same unreasoning intuition impelled him to believe that there was more in the likeness of the flash to a brandished sword than mere similarity; the flash was a sword, but of a kind new to human warfare. In that hesitating, half-deliberate piercing of outer space, the flash had resembled nothing so much as a keen blade in the hand of a ruthless enemy deliberating where first to strike an unarmed foe.

All of this, of course, was sheer imagination having its will on overstrained nerves. Nevertheless it is recorded for what it may be worth as an instance of those rare moments when the human mind, piercing through the opacity of events, sees the other side of time, beholding there a shadow of the future.

Although Brande said nothing at once, he seemed half to believe him.

"Northern lights—perhaps! You ought to know; all that sort of thing is in your line. Still, after seeing that poor fellow's plane come down this afternoon in a sheet of green hellishness, everything looks green. Are you going to mention this to Ferguson?"

"No," Alan whispered. "Better say nothing about

it. He has worries enough as it is. If there is anything in what we saw, he will be the first to find it out."

"Oh, Brande, where are you? Come and see if this will do."

They emerged from their shelter and joined the Chief.

"This gave me a lot of bother, and even now it only half conveys what I want the Health people to feel." He handed Brande the foolscap. "Something undoubtedly is wrong. I feel it myself. How about you, Brande?"

"Oh, I've felt out of sorts all day," the Doctor acknowledged, running his eye down the sheet. He started slightly as he reached the end. "Yes, I suppose this will do. You don't care to make a more definite statement at present?"

"No. Until we understand better what the cause of this restlessness is, I think it unwise to give more definite advice. I shall watch our own men closely, and see what their symptoms are, especially the fellows about the heavy machines. If there is anything in this idea that the metals are to blame, we should be able to run down the cause of it all without much difficulty. For the present, if the epidemic is anything more serious than a passing tension due to the dry spell all over the world, false reassurances will only make the situation harder to control should real trouble develop. As for the blisters, they may be due to mental suggestion, acting on the unwise hint that discharges from the radioactive metals also produce

nervousness in addition to the severe lesions of tissue. The painlessness of the present burns might support this theory, in which, however, I do not place more than provisional confidence. The outburst is too universal, too explosive to be merely mental suggestion, unless, of course, the whole epidemic is caused by a deterioration of the mental faculties consequent upon some, at present unknown, physical decay. You see how difficult it is to say the just thing. A misstatement now would be fatal."

"It would," Brande assented. "For once I believe in the physician telling the patient all he knows, even if it be nothing. You are the doctor, Ferguson. I shall take this at once to the Department."

"Read it over first, aloud. It may sound worse than it is. No use in dosing the patient to death, no matter how good the medicine."

Brande read slowly: " 'In answer to a request from the Department of Public Health for his professional opinion on the prevalent sensations of physical discomfort and mental distress, Director Ferguson of the Independent Research Laboratories wishes to make the following statements. First, the universal complaint that the physical sensation is one of 'having electricity poured into the veins and nerves,' can have no scientific basis whatever. Such an explanation of the bodily discomfort at present being experienced by all but a few (of whom I am one) is manifestly absurd. No competent physicist would entertain it for a moment.

" 'Second, the indefinite "something else," other than

electricity which some complain is being "poured into" their veins and nervous systems, means nothing until it is more accurately described. When those suffering in this way can state definitely what their symptoms are, it will be time enough to seek the cause and find a remedy.

" 'Third, there actually is at present great unrest of body or mind, or of both, among all classes of the people. This I take from the report of the Department of Public Health, communicated to me by Doctor Brande, also from the word of a reliable employee. It would, therefore, be futile to deny the existence of this unrest. As to its cause, I am as ignorant as anyone. But I have already formed a theory, which the staff of the Independent Laboratories will immediately proceed to test by experiments. Pending the outcome of those experiments, which may take weeks to complete, I beg all, as their servant in science, to have patience equal to that of our staff. Knowing nothing, at present it is our business to learn. The moment a definite conclusion is reached, it will be published broadcast.

" 'If, as I fear, the cause lies deeper than the present continued dry weather, it will take the united courage of the world to meet and counteract the danger. With patience and cool heads we shall win. Let all who would see the victory go quietly about their daily work, hoping for the best, and prepared to win it by sheer endurance. Do not be alarmed by any unusual occurrences, no matter how far from the tranquil course of nature they may seem. I can assure you,

staking my scientific reputation on the assurance, that if disaster is to overtake us, it will be sudden. Let it not be said that we lack courage in this crisis! The world has outgrown the fear of death. If the world is to suffer a catastrophe, no human being will ever realize the fact. We shall be painlessly annihilated before we know what it is that strikes. Therefore, no matter how alarming possible disturbances may appear, disregard them, for while they last we live.'"

"A trifle strong," remarked Cunningham.

"So is the possibility of danger, Alan. You have been with me long enough to know that I never will support the ostrich policy of our administrators. It may be the logical thing for a politician to bury his head in the sand when he sees a storm brewing; I don't know. But this I do know: we shall not win out in the present fight unless every man with brains in his head stands up and faces things as they are."

"But in your note you say that you personally feel none of this reported bodily discomfort. Isn't old Trowbridge's case rather slim evidence from which to infer its universal existence? How do you know that Brande's reports have not been exaggerated before he got them, and the whole thing is not largely imagination—as you suggested yourself?"

"I don't know. Nevertheless the evidence is too reliable to be all rumor. I was careful to say nothing about the other complaint, the mental distress. You noticed that?"

"Of course. I take it that you ignore its existence, if it has any."

"I am trying my best to do so, for as it happens I myself am one of the victims. Ever since we came into this room I have been tormented by an unreasoning conviction that Jevic has won the first lap of our race. My feeling is unaccountable and foolish, I know; but that doesn't neutralize its discomfort. You and Brande may argue and reason all you please, but you'll not budge my conviction that Jevic has mastered some essential detail of the process we are after, and that he is using it to our disadvantage. There is nothing physical or reasonable about any of this. The whole sensation is entirely subconscious. So reason won't cure whatever ails me."

Alan had never seen the Chief so haggard and distraught, so little himself. It seemed best to hold his tongue. Certainly the Chief's face was sufficient evidence of mental unrest in at least one instance. Brande had folded up his paper and put it into his pocket. He reached for his hat.

"This message must be in all the workers' journals the first thing in the morning." He hesitated, glancing rather timidly at the Chief. "As for you, Dr. Ferguson, I should be the last to try to talk away what I feel to be a reasonable conviction. Something tells me, what, *I* don't know, that Consolidated Power has you in its grasp. And if you don't get free, none of us will. Body and soul for the next generation—forever, for all that any of us can foresee—every living and working being on this earth must sweat to do the bidding of the last and rottenest of the Corporations. It may reform when once it gets complete and absolute

control, playing the benevolent despot for the good of humanity. But that's a forlorn hope, a gambler's chance. And for my own part I would rather be poor and lean, and free to do as I please within reason, than be fat and prosperous by the smug grace of greed. Well, goodbye for the present, and good luck!"

"Good luck to you too, Brande! See that the Department keeps the people cheerful and prepared."

Vera returned just after Brande left.

"Do we work tonight, father?"

"No. To tell you the truth, I'm all done up, and haven't an ounce of go left in me. Let us all get a good night's sleep and start fresh tomorrow evening. You might make the rounds before turning in, and tell Wills and Thompson to lay off with all their assistants tonight and all day tomorrow. Everybody must loaf for the next twenty hours. After that there will be no let up until we find something vital."

"Hooray!" cried Vera. "I'll call up David in the morning and get my revenge. I'm sure I shall beat him this time. And tonight," she added with a seriousness strange to her usual lightheartedness, "I shall be glad of a long sleep. The sight of that poor fellow's wreck sticks to my eyes. All my nerves feel as if they were going to explode. Breakfast at eleven sharp. Good night."

She turned to leave them, facing the high north windows as she wheeled.

"What a strange light!" she exclaimed. "Look, father!"

They both looked where she pointed out at the

northern sky. With a feeling as near to terror as any of which Alan had been guilty in his life, he realized that the brandished sword had found its mark. Against the deep blue-black of the Great Bear glowed a faint nebulous patch of green light, about the size of the full moon. Slowly waning in intensity, it vanished while they watched. Again Alan had that strange sensation that whatever was taking place, was happening at an inconceivably vast distance from all our system of stars. The appearance of that green patch against the Great Bear was coincidence only. How he knew this he could not tell—could not even guess. The catastrophe in the heavens which that flare announced must have been on a stupendous scale, even in terms of the vast masses and distances with which Astronomy deals, to be visible in such magnitude at their infinite remoteness from its source. And a second thought appalled him: what could have been the nature of that cataclysm which had completed its ruinous cycle while they held their breath watching it?

"A new star?" Vera asked in wonder.

"More likely a very old one, or a swarm of them, gone up suddenly in flames," answered the Chief.

"But it couldn't happen in a few seconds like that!" Vera protested.

"There may be some things in the heavens that science hasn't dreamed of," he said, "and that small cloud, perhaps, was one of them. It was exactly the color of the nebulium line in the spectrum."

"That indicates nothing. Whatever nebulium may

be," Vera objected, "it does not follow, as Jevic remarked the other day, that it will give a flame green to the naked eye, just because its spectral line is that color. And you seem to imply that the faint patch up there was caused by some incredibly swift conflagration. Father, you are dreaming, and I'm going to do the same."

He smiled. "Don't forget to tell Wills and Thompson before you go down the lane."

"I won't," she said. "Good night."

CHAPTER XIII

A Deserter

EXCUSE me a minute while I call up David? You can begin breakfast. As you see, I have played the true farmer's wife for once, and started the day with all the food in the house."

"A good job too, Vera. I could eat the whole lot," said the Chief. "I feel as fit as a fiddle." He looked himself; the miracle of sleep had completely transformed that careworn wreck of last night into a vigorous man capable of a hard day's grind.

While he and Alan were busy planning the assault, Vera unostentatiously laid her telephone on the table. Again Alan had missed a chance of finding out where she kept it. Hers was a full-size man's portable, like Brande's; for she absolutely scorned the showy hair ornaments or lockets in which most women disguised their delicate lady's size talking tools. Quickly adjusting the combination and setting the key of the cut-off so that the others should not overhear his replies, she called MacRobert.

"David? Yes, this is Vera. Will you come out on the links this afternoon, at one say? We're taking a holiday. You be wise and do the same."

The pleased anticipation on her face changed slowly to disappointment as she listened to Mac's answer. "Very well!" she cut him off with a snap.

"No wonder he balked," Alan said. "If you really wanted him to play golf with you this afternoon, why didn't you call a truce, and promise not to propose for eight hours?"

Although she ignored his sympathy, she looked fixedly at the large platter of ham and soft-fried eggs, as if speculating whether the work of cleaning up the mess afterwards would be a fair price for the joy of flinging all that good food at his head. Just as he ducked she decided in the negative, with a sigh.

"Father, David says he's terribly busy. He asks you not to go out until you get a letter from him by special messenger. The letter will explain why he's so busy."

"He might have whiffed it through the mail," the Chief remarked, attacking a thick steak. "It would have beaten the messenger here."

"David mistrusts all inventions but his own. Most likely he thought the weight of his communication would block the tubes. Ah, that's probably the messenger now."

Susie, the young colored maid, was expostulating with someone in the hallway.

"But I wouldn't dare to let you in now; they're at breakfast. It's the only square meal they have all day. And if there's one thing the master can't abide, it's being disturbed at his food."

There was a faint clinking, as of coins being passed,

and presently Susie, showing all her magnificent teeth, appeared bearing a neat card on the one and only silver tray.

"Miss June Adams," the Chief read, fingering the card dubiously. "Surely this is some mistake? We know nobody of that name."

Vera's eyes sparkled like stars. "You are so unobservant, father! This is Alan's doing. Don't you remember that striking blonde yesterday at the General Office? Alan's gallantry smote her to the heart, and now she has dropped her secretarying to come and admire his 'fine, confused feeding'. Show her in, Susie!"

Surely enough it was Jevic's private secretary whom Susie ushered into the breakfast room. She looked fresher and cleaner than ever; but that is natural for girls having the genuine golden hair and peach-blossom skin, provided they take reasonable care of their capital. The name June suited her to perfection. Ferguson rose, and bowed. Reluctantly abandoning a soft-fried egg just at the most critical moment, Alan managed, by sacrificing the egg to the table cloth, to follow his Chief's example before it was too late.

"Will you join us, Miss Adams? Alan, draw up another chair."

"Thank you," she replied, "but I had lunch just before I came."

"Lunch?" gasped the Chief, raising his brows. "Good Heavens, girl, this is our breakfast! Did you eat yours in the middle of the night?"

"Almost," she smiled. "Well, if you insist, I will take a cup of coffee with you."

She took the chair, which Alan placed as near to his own as seemed diplomatic on so brief an acquaintance.

"Now," said Vera, bustling with hospitality, "how much sugar?"

"Three, please," Miss Adams requested, with her usual business-like crispness, thoughtfully turning away her head while Alan made desperate attempts to salvage his shipwrecked egg. It was no use; the egg was a total loss.

"Ah," said Vera, dropping in three large lumps of sugar, "three will be easy to remember. Just what Alan takes. He is very fond of sweet things," and she smiled innocently at the wretched Miss Adams. The poor girl turned a vivid but very becoming pink, especially on the small and well-shaped ear turned to Alan. He, for his part, could cheerfully have shot Vera then, but she seemed quite guiltless of playing the cat.

It was a most exciting meal, replete with silent drums and alarums, and interspersed with spasms of doubt and uncertainty, and all the time Alan felt with a chilly uneasiness that Ferguson was watching the guest stealthily, with perhaps a trace of hostility under his successful efforts to put her at ease. Never once while the meal was in progress did he hint that her visit was strange, or that she was anything but a charming and most welcome guest. Only when they adjourned to the conservatory, and had lit their ciga-

rettes, did he venture to ask the occasion of her visit.

For a moment she hesitated, then poured forth her story without reserve, though not without interruptions, in a manner which carried with it the convincing simplicity of truth.

"I know you think I am a spy," she began, "that Mr. Jevic sent me to see what I can pick up."

The Chief nodded. "Can you blame me? Being so close to Jevic as a confidential secretary must of necessity be, you cannot have failed to observe that your employer's interests and those of these laboratories are, to put it bluntly, diametrically opposite. Further, you must know that Jevic and I are mortal and irreconcilable enemies. Then what more natural than that I should suppose he sent you up to spy out our camp?"

"That would be reasonable if I were still an employee of Consolidated Power. But I am no longer with them. I was discharged this morning shortly after eight, dismissed on a mere technicality. See," and with trembling fingers she hastily opened her neat leather purse, "here is my discharge. And here is a cheque for three months' advance salary, which is given only in cases of final dismissal."

The Chief took both and glanced at them.

"Judging by the cheque, Miss Adams, you must have been a valuable member of the General Office force," he remarked, handing back the slip and cheque.

"I was," she admitted, and Alan admired her complete lack of false modesty.

"How are we to know," Vera interposed in a voice that cut like a knife, "what evidence have we that

you are not still a valued servant of Consolidated Power?"

"Yes," agreed the Chief, "how are we to know that the cheque and the blue slip are not details of a rather obvious trick?"

Miss Adams flinched as if she had been struck across the face. "I never thought you would disbelieve me," she faltered. "I came wishing to help, to do something——"

Her voice trailed off to silence. Evidently she was on the verge of tears.

"You will pardon our frankness, Miss Adams," the Chief continued; "but from your experience and your knowledge of what Jevic is seeking, you must know how important to us and to the world is absolute secrecy as to what is going on at the present time in the Independent Laboratories. We can take no risks. If we fail, Consolidated wins, and then there will be Old Harry to pay."

"I know!" she exclaimed, looking up eagerly; "and that is why I came. Your message in this morning's *American Workers' Journal,* given out by the Department of Public Health, electrified me. No, not that way," she smiled; "I have not yet caught the new disease, so you needn't turn me out on that score. Oh! I do so wish to help, to be of some use on the right side. I am ashamed now that Consolidated bought my silence as well as my business ability all these years. I must speak out! Things have been coming to a head for almost a year. The Russian harvest crisis that your men averted was only the beginning.

Mr. Jevic has thought over and planned for this campaign for years. It is his great attempt. Unless you act quickly there will be some terrible disaster. I know it, oh I know it!"

Alan had not lived under the same roof with Vera practically all his life for nothing. Her feelings, her personal likes and aversions were as an open book to him, even when she smiled her sweetest and said nothing. She was smiling now. He knew for a certainty that Vera distrusted the visitor, and that never, so long as she lived, would she believe a single word that the girl said.

"We all know that something pretty serious must happen unless we checkmate your late hero, Miss Adams, before many months have passed," she said coldly, still smiling. "For you did admire him, did you not? Until this morning he was the greatest man this world has ever produced? Well, never mind; we shall soon have a greater with us, and you can watch him smash Consolidated."

"I did admire Mr. Jevic," she replied with a show of spirit for which Alan liked her. "In fact I admire him still. He is great! But that does not cloud my vision of what Consolidated is." She turned to Ferguson. "What can I do to convince you?" she begged, leaning forward to look the Chief squarely in the eyes.

But the Chief was invulnerable.

"You can do one thing. You can give me certain information."

"Father," Vera interrupted, in the cold tones of a

hanging judge who has an unpleasant duty to perform, "father, you are not used to dealing with women. All your work has been with men. Perhaps your way of going at things will offend Miss Adams. You had better let me ask her the questions; women are so much cleverer at some things, you know," she finished with an ambiguous smile which included June and Cunningham.

"Thank you Vera, but it is all very simple."

"Indeed it is," Vera assented grimly. But the Chief noticed nothing unusual in her remark, and continued his examination.

"Now, Miss Adams," he began, "the men in the physical laboratories of Consolidated have been working on polonium for the last eighteen months, have they not?"

"They have."

"And on the isotopes of lead?"

"Yes."

"And last week they brought their work to a successful conclusion?"

"They did."

"All this is, of course, common knowledge. Jevic himself published this much in last Sunday's *Torch*. So you have not yet committed yourself. Now, what I wish is a little information upon that research which is not yet published. What was the nature of that satisfactory conclusion which the Consolidated experts reached?"

"A thoroughly practical method for reversing the natural process, and thereby transmuting lead into

polonium. They have not only taken the common forms of lead and changed them into the highly radioactive variety of polonium, but they have done so on a commercial scale."

"The details, I suppose, came through Jevic's private laboratory, and incidentally passed through your hands?"

"Yes," she admitted with evident reluctance.

There was an intense silence for a few moments. Vera broke it with a natural, but rather personal question. She had been watching June as a cat watches a robin.

"Pardon me, Miss Adams," she said, "but were you ever on the stage?"

"Why, no, Miss Ferguson! What a strange question. Why do you ask?"

"I was only admiring your coloring, and enjoying it," Vera replied innocently.

"Oh, thank you, Miss Ferguson," replied the blushing visitor, evidently doubtful as to the exact meaning of the compliment.

"So, Miss Adams," the Chief resumed, "you might be able to give us a hint as to the essential features of the process? A bare indication is all that our men would need to set them off on the right track."

"I could readily do so."

"Will you?"

"No."

Again there was a silence, and an exceedingly uncomfortable one, which once more Vera ended.

"Why not, Miss Adams?"

"Oh, I hope you will understand," she broke out passionately. "You have the confidence of these laboratories as I had of the Consolidated. It is a point of honor with me not to betray the trade secrets of my employers, no matter how unjustly they may have dealt with me. More than that, every one in the Main Office is sworn to secrecy regarding processes perfected or being tested in the laboratories. I simply can't break my oath; I am not that kind. Whatever else I may be, and I am half ashamed that I came here at all, I am not a traitress."

Vera smiled, but it was a dangerous smile. Miss Adams smiled back, artlessly, happily. Alan longed to wring Vera's neck.

"I believe you, Miss Adams," the Chief continued. "But tell me," he went on as her face broke out with another smile, "your oath does not forbid you to report anything you see in what Mr. Jevic calls his private laboratory—the room you showed us into yesterday?"

"It does not. Mr. Jevic is very proud that no one on the staff but himself can grasp even the simplest of his calculations until they have been translated into concrete directions for physical experiments. They are so condensed, he says, that even the greatest mathematicians would have to spend years working them into ordinary shape."

"The heel of Achilles!" the Chief exulted. "Conceit! Who would have guessed it of so great a man?"

"David," said Vera. "He pricked Achilles in just that spot two days ago."

"But for the life of me," Miss Adams objected, "I couldn't recall one formula or a single diagram in all his calculations, although I have seen and handled them hundreds of times. "You may not believe it, but all symbols look alike to me, and to save my soul I could scarcely tell one diagram from another. They all look like cobwebs to me."

He laughed. "I'm not quite so bad as that. But to tell you the humble truth, Jevic's calculations would be of very little use to me personally, I suspect. In fact I'd be willing to wager that besides himself, there is only one man living who might make something out of your late employer's work—David MacRobert. And Jevic is not likely to present David with an autographed copy! so that way is closed. No, Miss Adams," he went on in a graver tone, "it is not Jevic's calculations that I care about at this moment. Nor am I particularly interested in polonium. They can brew it from Dutch cheese for all I care. It has nothing whatever to do with the main puzzle on which our force is working like slaves. That I know. I used polonium to find out about you. Before I forget it, let me say that you have proved yourself to be honest and trustworthy."

Miss Adams beamed. So did Cunningham; but Vera seemed to be looking doubtfully into the dim mists of futurity.

"Now," the Chief resumed, "you can tell me something that will in no way compromise you or cause you to break your word. What did Jevic do after we left him yesterday? Remember, Miss Adams, we

trust you. In this way, by telling everthing, down to the minutest details, you can help us to help the world. Even now disaster may be on its way. Your report may show us how to check or avert it."

"Shall I tell everything?"

"Everything," the Chief requested.

CHAPTER XIV

Miss Adams's Story

MISS ADAMS began rather diffidently, as if she felt the coolness of Vera's non-committal smile, gathering confidence, however, as she warmed to her story.

"Mr. Jevic spent the whole afternoon going over a huge and terribly complicated sheet of formulas. It was as big as one of those largest size wall-maps in the transportation offices."

"Did he seem to be satisfied with his work?"

"Not altogether. In fact he remarked—he often used to talk about his work to me or to the office furniture for lack of someone better able to understand him—he kept on muttering, indeed, that he could not find the right combination to close up his chain of equations and make it complete. He kept referring to something he called an 'arbitrary constant'. And once he looked up with the strangest expression in his eyes, exclaiming that he understood at last."

"And what did he say?" Alan asked.

"Well, I don't know if I can recall it word for word. But I can pretty nearly, for it was so strange, so unlike his usual confidence, that it impressed me

strongly. 'Miss Adams,' he said, 'I have been balked since last Monday night by a difficulty that should not take me more than five minutes to overcome. It is here,' he said, pointing to his sheet of calculations. 'I cannot, putting forth all my strength, determine from this set of equations what the initial value of a certain arbitrary constant should be in order to give me the complete solution—to close up the entire physical cycle—of the great problem. But for that arbitrary constant I should master, not only this world, but the universe! At last it has flashed upon my mind why I cannot succeed. All of these equations are the essences, the shorthand of Nature, if you like, of universal laws. On this sheet I have but combined and recombined these laws in new ways, as one might mix together a thousand chemicals. And these laws are independent of me and of my will. They exist and multiply outside of my mind; they bring forth new combinations of eternal principles, begetting physical laws undreamed of in our science. One of these laws, a law of tremendous import for this world, is bound up in the initial value of that arbitrary constant. Am I responsible for the unknown law which that constant expresses? No! It has germinated from these calculations as a seed takes new life and grows from the soil in which chance or purpose buries it. This unknown law is a living agent, capable of invaluable good or evil for humanity. And where is this agent at present manifesting its existence? That, I realize at last, I do not know. The arbitrary constant is abroad in the universe, creating where it will, anni-

hilating where it will. And only by blind accident can I reach across space and time to grasp it with my intelligence!' "

"Mr. Jevic is a sicker man than we thought," said Vera. " 'That sounds like madness.' "

Miss Adams looked startled, but said nothing, and Ferguson continued.

"So far, so good. That is just what I imagined. Now, as to details, what did Jevic do immediately after we left? How was he employed between half past one and two? Everything, mind, to the most trivial action."

She thought for a moment. "Well, just after your party had gone, he asked me to step outside and note carefully whether there was anything unusual about the trees or the landscape, or in fact about anything whatever. Also to report exactly what I observed in any other way, and to note what sort of an impression it made on me."

"Ah," said Vera, "a sort of trying it out on the innocent bystander. And what did you report?"

"Really, there was nothing of importance. The trees and lawns looked beautifully fresh, much greener and more spring-like than they had been for weeks. It was a perfect day. The sky shone like a clear dewdrop in the early sun, with a beautifully delicate sea-green around the horizon, and a deeper tinge of the same hue directly overhead, just the color the western sky sometimes is on a clear summer evening."

"And was that all you noticed?" asked the Chief tensely.

"At first, yes. But I stayed out nearly twelve minutes, enjoying the brilliant sunshine. And just as I turned to go in, I saw something that makes me blue now to think about, but which at the time seemed trivial enough. A single, very old-fashioned airplane, one of the ancient type that needed a human pilot, buzzed over the hills to the southeast, and climbed up the perfect sky. I watched it for perhaps three minutes. The pilot was so evidently taking a holiday that I felt a kind of envy of him, free up there in the blue while I was drudging down below."

"What made you think he was taking a holiday?" Vera asked.

"Because nobody nowadays would dream of using such a machine for any practical purpose."

"And may I ask what makes you blue to recall it?" asked the Chief.

"A notice in this morning's *Worker's Journal*. The poor fellow was accidentally killed. It seems that his antiquated machine exploded. They have found no trace of him, nothing but the fused wreckage of his plane. The *Journal* says he was a master mechanic at our Chicago assembling plant, with a hobby for antiques. He had bought the machine a month ago at a sale of Great War relics, and was giving it his first practical test."

"Did the *Journal* say where he got his petrol?"

"Yes. He spent quite a little having a sufficient supply manufactured by the General Chemical Company of Chicago. They filled his tanks with it yesterday morning."

"So that's settled," Alan broke in. "His gas, at any rate, is above suspicion. The G.C.C. people are absolutely reliable.

"That's settled," the Chief agreed. "The machine, as we surmised, was a genuine antique. And it was not destroyed by any fancy explosive introduced by accident or design into the tanks. But the cause is yet to be found. I have a feeling that our search will end before the month is out. Miss Adams, I compliment you. You are one of those rare beings, a born observer. Without being conscious that you had used your eyes, you saw all there was to see."

She flushed with pleasure. "Mr. Jevic said something like that too. Only," she laughed, "he put it rather horridly. When I told him what I had noticed, saying I had seen this, that, and the other, but nothing of importance, he stared at me quite fiercely. 'Would you know the importance of a supposedly extinct volcano,' he asked me, 'if it blew up while you were picnicking in the crater?' "

"How rude of him," Vera murmured.

"And how did Jevic take your report," the Chief asked, "aside from his volcanic question?"

"He seemed delighted. 'Miss Adams,' he said, 'let me tell you something that will make your fortune if you have the nerve to use my secret. What distinguishes the successful, first-rank man, in science as in anything else, from your crude, competent bunglers, is the use he makes of chance. The bungler allows chance to get the better of him. It never enters into his calculations for the simple reason that, like a

booby, he carefully shuts all doors by which the unknown, vital element might enter. To me, chance and the unknown are the breath of inspiration; I plan for them, leave room for them in all my calculations and inventions. So, when the totally unprophesied does finally present itself, I am ready, I seize the vagrant event and make it sweat to bring about what I wish. It is all so much pure gain; nothing to scheme for, nothing to rack my brain over in order to accomplish the desired end; instead, the means presented without the asking, ready for immediate use. But I do not rely entirely on chance; to every bow I have half a dozen strings. Chance is merely one of the more elastic. Miss Adams,' he ended up by saying, 'I have given you a great secret in exchange for an unexpected chance. Now we are quits.' "

"He was quite right about chance," Ferguson admitted ruefully. "That is where David's kind of work comes in so pat. But about Jevic. Was that all he said? Think carefully."

She knitted her brow. "Oh, yes. Now I remember. He asked how the beautiful morning I described had impressed me. I replied that although so far I had no trace of the new sickness, the bright sky had given me a vague feeling of tension and uneasiness. He laughed, and told me to keep out of the direct sunlight for a day or two."

"This is most important, Miss Adams!" exclaimed the Chief. "Did he give a reason for his advice?"

"He took great pains to make himself clear. He

said the sunspots are to be extraordinarily active for a few weeks."

"How did he know that?" interrupted the Chief, leaning forward excitedly. "There is no normal maximum due now, or in fact till next year."

"He declared that his calculations, based on the last reports of the Mount Everest Solar Observatory, predicted a great outburst on the Sun with absolute precision and certainty."

"Plausible, but improbable," the Chief muttered, settling back in his chair. "I wonder what hellishness he's planning to try next? Well, I beg your pardon, Miss Adams. You have a right to look shocked. Whatever happens won't be any fault of yours. And what explanation did he give for his advice about keeping away from the direct rays of the Sun?"

"Oh, it was natural enough—what they taught us in high school. The sunspots would send the temperature up; there would be terrific electrical storms all over the sun, soon affecting the earth. There would be intenser actinic rays, causing greater chemical changes in all nature, and so on. Human beings and animals would of course feel high-strung and nervous, with perhaps great dryness of the skin and increased thirst."

"As you say, natural enough. Almost too natural in fact," said the Chief drily. "Not a word about these mysterious blisters, you note," he remarked to me. "And what did our friend the enemy do with your report? Did he act on it?"

"Not that I could see. He concentrated for a few minutes on his calculations——"

"The same calculations as those you mentioned? The huge sheet he was busy on all the afternoon?"

"The same sheet. It seems to be his favorite."

"And then?" Vera prompted.

"He asked me to see who was working in the fifth ray chamber. I knew it was vacant just then, Dr. Larmor having finished his investigation there two days ago, and not yet having commenced a new research. But for the sake of obeying orders to the letter, I went and looked. When I reported, Mr. Jevic said he would just step into that ray chamber himself, to see that everything was in good order for Dr. Larmor's return. He is very fond of Larmor."

"At what time did Jevic go into the ray chamber?"

"I don't know precisely. However, it must have been about seven or eight minutes to two, as he was back at his table by ten minutes after two, and was gone only a short time, certainly less than twenty minutes."

"And while he was gone," remarked the Chief quietly, "in those few minutes he made use of the rare chance which you had given him, and fired what he pleased to call the first shot. You will notice," he went on turning to Cunningham, "that Jevic still had confidence in his calculations when he fired that shot. The truth that he himself might be playing with hell-fire, as he said of MacRobert yesterday, had not yet dawned on him. Let him express it in any way he pleases—elusive arbitrary constants with vital existences inde-

pendent of his mind, and all the rest of his mysticism —the truth remains. He is out of his depth, I suspect, and at last he is beginning to realize it. If only he had seen the truth before he fired his first shot! He has touched off, perhaps, the first spark of what may develop into a world conflagration. This will be no childish war such as they fought in the old days. There will be no long-range bombardments, none of that romantic bow and arrow, gas and artillery fanfare. This, I repeat, will be a conflagration! Not a mere flash in the pan. And unless I am wholly at fault, it will take a bigger man than Jevic to put out the flames." He sighed impatiently and looked at Vera. "I do wish MacRobert would hurry himself a little. He will walk, as usual. Run out and see if you can meet him."

Vera ran, literally. When she had gone, June Adams brightened.

"Do you know, Mr. Ferguson," she said, "I think you take rather a serious view of the situation? I feel sure that Mr. Jevic is capable of controlling any of his work. Why, before I went home yesterday evening he was quite cheerful again. He was just nervous from overwork when he made that remark about not being able to get the arbitrary constant. But after a few hours' further work and a little refreshment he became quite triumphant."

"Do you mean to say that he finally succeeded in overcoming his difficulty?" the Chief asked, turning white. "Did he complete his work?"

"I shouldn't be surprised if he did," Miss Adams

answered with a proud inflection. "It was the first time that I had ever seen him balked. And before I left he was quite himself again."

"Do you realize what this means, Miss Adams? If Jevic actually has overcome all his difficulties and closed up the chain of his calculations, do you know where the world lies?"

"I can't say that I do," she admitted. "Where?"

"In the palm of Jevic's hand. It means that the whole human race is his servant in abject slavery."

It seemed to Cunningham that something like a faint flash of triumph lingered for an instant on the girl's amazed face. For she plainly was astonished. He began to feel puzzled about her and to wish that Vera had not run off.

"Oh, I hope not!" she exclaimed. "We should all be his slaves. And what would he do to me for deserting like this?"

"By the way," said the Chief, "you haven't told us exactly why Jevic discharged you. But let that go for a moment. Tell us briefly now how he spent the rest of the afternoon. I wish particularly to know how and when he recovered his self-confidence. Tell it in your own way. Did he make another trip to any of the ray chambers?"

"Not that I know of. At five o'clock he looked up from his calculations—I was putting some papers away in the large safe by the drinking-fountain—and asked me if I could return after dinner. Of course I said yes."

"Did the request surprise you at all?"

"Not in the least. About twice a month I expected to work very late handling the reports from the foreign branches. Last night, after dinner, I was busy tabulating the African reports. There was not much except estimates of the damage caused by the storm the other day, and I got through by ten o'clock. All this time Mr. Jevic had been working like fury at his main sheet of calculations. He seemed to have gone through it all from the first equation to the last, making notes and writing comments and strings of figures on innumerable small slips of paper. He works like lightning when he is absorbed. Last night was the first time for a year, I believe, that he went through all of the work on that sheet from beginning to end. Recently he has been working on only one or two small parts of an enormous tangle of symbols.

"His work seemed to have put him in high good humor. He smiled like a boy, exclaiming with great satisfaction that he had built better than he knew. I joked with him, saying that it was impossible for one who built so strongly not to know the worth of his work. He took me half seriously, and said that if I would stay and share his late supper—he always has something light between ten and eleven—I should see for myself. I accepted, and we sat talking.

"He was very pleasant. When he wishes to entertain his talk can be fascinating, even though in the end it always swings round to his own work, and especially to the great problem of unlocking atoms and controlling their internal energy. He told me all about the staff's recent work on polonium; how the

Consolidated Laboratories had solved one of the important riddles in the great problem itself, emphasizing again and again that in putting the conversion of lead into highly radioactive polonium on a commercial basis, the Consolidated scientists had tapped an absolutely inexhaustible reservoir of new energy. He predicted that within five years transportation, farming, manufacture, industry—all of life, in fact—would be revolutionized by this tremendously significant success. More important, he declared, the discovery itself had at last shown the true way to approach the problem of setting free and controlling the infinite fountains of energy in the atoms of all common things. He kept harking back always to the polonium discovery, seeming to wish to impress on me indelibly its unique importance for the solution of the greater problem.

"Although I understood but little of the scientific details which he discussed, I listened with the keenest interest. The discovery meant so much for the Corporation, he said; it would give them absolute control of every market in the world. Where now there is still some slight survival of international competition in foodstuffs and clothing, in five years there would only be Consolidated Power buying and selling at will, being able to dictate nationally and internationally the manufacture and transportation of all the necessities of life.

"It was then," Miss Adams said modestly, interrupting her tale, "that I determined to sever my connection at the end of the month with Consolidated

Power. But they were too quick for me," she laughed, "and cut me off very near the beginning."

"Go on," said Ferguson; "all this is clearing up more than one doubt in my mind. Was the account of the polonium discovery what Jevic meant by saying you should see for yourself how well he had built?"

"Evidently not. About half past ten, Chung, his favorite Chinese servant, came in with Mr. Jevic's supper. Mr. Jevic sent him out to bring in some cakes and coffee for me, and while he was gone, explained what he meant to show me. He declared that he alone, of all mathematicians, could predict certain events among the stars."

"Ah! What events?"

"Well, he said that astronomers for several centuries had been keeping very careful records of all the so-called new stars that suddenly flash out in the sky and then, after a few weeks gradually fade away again, until only the most powerful telescopes can find them, at last disappearing completely. The astronomers, he said, had been keeping these records in hopes of being able to form a theory of these new stars sufficiently accurate and comprehensive to enable them to predict when another new one shall appear. So far, as everyone knows, they have not succeeded. But Mr. Jevic asserted that his mathematical researches on the great problem of energy incidentally contain a clue which has given him the complete secret. He can predict, he said, to a minute when a new star is to appear. And what is perhaps even stranger, he added, his recheck of his main work had shown him

how to tell precisely where the new star should appear. Until yesterday he had only been able to assign a certain rather large area within which the new star would flash out. It was all a question, he declared, of narrowing the probable limits of more refined work in strict accordance with the mathematical theory of chance, basing actual predictions on all preceding physical and astronomical data relevant to the event."

"A sort of improving his aim?"

"Exactly. He saw that I disbelieved him, but only laughed. 'You wait,' he said, 'and while you eat your cakes, look out of that window at the North. Do you recognize that big irregular oblong of stars with the curved tail or handle?'

"'Of course,' I answered, 'it is the Big Dipper,'

"'Yes, or the Great Bear, whichever you prefer to call it.'

"Just then Chung returned, bringing my supper. Mr. Jevic inspected what Chung had brought for me, and laughingly said it was not good enough. He reached for a slip of paper, and wrote an order to the chef on the back."

"On the back? Then what was on the front?"

"Oh, it was one of those slips on which he had been scribbling all afternoon, and was covered with strings of numbers and mathematical symbols."

"I see," said the Chief grimly. "And what did he do with that innocent slip of paper?"

"Gave it to Chung, of course, to take to the chef."

"And you are sure it reached the right destination?"

"I am. Because Chung had no sooner left than Mr.

Jevic remembered that he had omitted loquats—of which I am particularly fond—from the list, and went after Chung to save him the trouble of another trip. In a way Chung and Mr. Jevic are strangely devoted to each other. They often joke together for an hour or so in Chinese."

"Mr. Jevic seems to have been very thoughtful of your comfort," Alan remarked. At last he was beginning to experience an emotion in which he had always disbelieved—jealousy.

"He was," she admitted with her brightest smile. "When he went after Chung he said he was glad of the chance to give him a practical demonstration of what a young woman's late supper should be. Mr. Jevic is a charming host."

"No doubt," said the Chief drily. "He returned, of course in due time with a regal spread. We may take that for granted. There is nothing small about Jevic. His conversation was entertaining?"

"Very. He seemed quite to have recovered his good spirits. At eleven o'clock he began to talk astronomy again. 'While you eat your cakes,' he said, 'keep your eye on our friend the Bear. You can see him through the third one of the north windows. Right in the middle of him, at four minutes past eleven, you will see what some people would call a new star. It won't last so that you can follow it with the naked eye for more than a few moments, so don't pay too much attention to your coffee."

"And you saw what he predicted?"

"I don't know whether I did or not. The whole

thing may have been my imagination working on his suggestion. But I did imagine I saw, at four minutes past eleven—for I glanced at his old-fashioned clock when it happened—a sudden haze of greenish light appear, and then disappear exactly where he had told me to look."

"What did you say to Mr. Jevic?"

Miss Adams smiled in a pleased way, evidently reflecting how neatly she had outwitted the great man.

"I told him," she said, "that chance had once more come to his aid, but that next time he might not find himself so lucky."

The Chief filled his old corncob and lit it carefully before replying.

"Miss Adams," he said between puffs, "your powers of observation are natural and therefore excellent. What you saw may have been chance. I'll admit that. Would you call it chance if my daughter, Mr. Cunningham and I happened to see that identical patch of greenish light at the same instant it appeared to you?"

She looked startled. "I don't believe you saw it!" she exclaimed.

"But we did. And I am inclined to think there is less of chance in this than you appear to believe. I would give a great deal to know what Jevic was doing in the fifth ray chamber yesterday between five minutes to two and five minutes past. Ten minutes is too much time for a man of his caliber to spend over the destruction of an antiquated airplane! And there are several apparently trivial points in your story

that are far from clear to me. Of course," he added with faint irony which wholly missed its mark, "Mr. Jevic was employed solely in supervising the preparation of your supper while he was out of the room with Chung."

Miss Adams sat for some seconds white and speechless. Then she looked from Ferguson's face to Cunningham's, studying their expressions. She seemed to doubt their intentions.

"Do you mean to say you actually did see the light?"

"Ask Mr. Cunningham."

"We did; all three of us, exactly as Mr. Ferguson has told you."

"Then what does it all mean? What do you suspect?"

"Pardon me," Alan said to the Chief, "but before you answer her question, I should like to ask Miss Adams about one point. When did you and Mr. Jevic sit down to your supper?"

"It must have been about a quarter to eleven."

"And Mr. Jevic, then, was absent from the room for a little over ten minutes?"

"Possibly that."

"Thank you," Alan said. "That is all I wished to know."

"Why do you ask, Alan?" The Chief looked at him curiously. "Did you and Brande see anything while I was writing that note?"

"We thought we did," Alan admitted. "Unfortunately, neither of us noticed the time. In any case,

I think our suggestion that Jevic's actions about two o'clock in the ray chamber may have had some connection with the event at eleven, more probable than my own inference. Whatever effect, or disturbance it was that caused the patch of green light must have taken several hours to travel the enormous distance from the source to the target. At least one would suppose so."

"Of course. That is, if the green patch was as distant as even the nearest of the stars. And in that case it would be a question of years, not hours, if the effect were due to any known form of energy. Again, you must admit that we do not know that Jevic visited the ray chamber when he left the room with Chung."

"We do not," Alan agreed. "Still, we might apply Jevic's favorite theory of probabilities to Miss Adams' menu which he had given Chung, and make a rather obvious guess. Provided that guess is correct, and your two-o'clock theory of the new star's cause also is right, then we may expect something else from Mr. Jevic's arsenal before very long."

The Chief's face was a perfect blank. "What did you and Brande see while I was writing?"

"Nothing much. A sword of greenish light feeling its way up the back of the sky toward the Great Bear."

"The whole effect may have been atmospheric," said the Chief, "due entirely to some sort of electrical storm. Indeed," he went on cautiously, with a glance toward Miss Adams, "that theory has certain attractions not shared by the others."

"Oh, what do you suspect?" she cried, looking from

one to the other with something akin to terror in her eyes.

"I suspect nothing," the Chief reassured her. "As yet I have formed only the beginnings of a theory. With these I need not trouble you. All I care to say at present is that your late employer might be able to tell you more than I. By the way, Miss Adams, why were you dismissed?"

"On a pure technicality. There is a rule at the General Offices that any employee who is late automatically forfeits his position. It is up to Mr. Jevic to give the unfortunate ones a second chance, and he often does. This morning I forgot my purse and went back to get it after starting from the apartment. To cut a long story short, that made me fifteen minutes late. Mr. Jevic was very nice, but said that in my case he simply could not overlook the breach of discipline. Leniency to one in my high position would have a fatal influence on those less fortunate. So I must go. We parted the best of friends. He even gave me this to remember him by. See," and drawing a wonderful ring from her third finger, she handed it to the Chief; "I know he valued this treasure with almost a superstitious regard. He has one like it, but not nearly so fine, on his own left middle finger. This one he took off his right little finger—it's almost too big for me. In a way I'm sorry we parted," she went on, as the Chief carefully examined the ring; "he was such a good employer! You understand, don't you?" she concluded warmly.

"Perfectly, Miss Adams," replied the Chief, still

scrutinizing the marvellous ring. "I admire your loyalty and I appreciate its value. Your salary, should you wish to stay with us as general secretary of correspondence, will be double what you were getting at Consolidated."

June gasped. "Thank you," she said.

"The work will be normal. Our foreign correspondence is quite heavy, but the domestic is light. You will supervise all of it, being personally responsible for the work of our clerical force. May I show this beautiful ring to my assistant, Mr. Wills? The rarer minerals are his particular hobby, and the stones, in this, I imagine, will interest him greatly."

"Certainly, Mr. Ferguson. I should like very much to know myself what the large orange stone in the center is. Perhaps if Mr. Wills is a specialist, he may be able to tell me."

"Perhaps," the Chief assented. "Alan, go and see if you can find Wills. Hurry back; I hear Susie going to the door. It's most likely Vera with that red-headed lump of Scotch obstinacy, here before his precious letter."

CHAPTER XV

The Eleventh Hour

CUNNINGHAM knew exactly where to look for Wills. A fanatic for work while on the job, scarcely resting day or night for weeks at a time, he took his recreation in an orgy of indolence. Today being an official holiday by order of the Chief, Wills would be found in his hammock which he had stretched, when he first came to the Independent, between two wireless antennae on the roof of the electrical laboratory.

Surely enough, there he lay on his back, an unlit cigar hanging lazily from the corner of his mouth, and a copy of the *Daily Scientific Bulletin* drooping from the hand that was too listless to let it fall.

"Get up! you lazy bear," shouted Cunningham. "The Chief wants you at once."

"Thank heaven you've come," he murmured at last. "Now I can smoke. Light my cigar, will you, like a decent chap?"

"That's one on you. I left my lighter in my other clothes."

"Then use mine. It's in my shirt pocket."

This was too much, even from Wills in his most

festive holiday mood. With one flop of the hammock Alan shot him, his *Bulletin* and his precious cigar into a neat pile on the flat gravelled roof. He lay quite still, and for a moment Cunningham feared he was hurt.

"Pick me up and put me on my feet," suggested an infinitely tired voice from beneath the pile that was Wills.

"Hang it all, man," he said petulantly when at last Cunningham had stood him upright, "what did you do that for? I can't sleep on my feet like a horse."

"Orders. The Chief wants you to come down and give your opinion on a rare jewel."

He showed signs of awakening. "What sort of a jewel?"

"That's what we want to find out. Whatever it is, the thing is unique. Something right in your line, I imagine."

"Help me on with the rest of my clothes. My socks, I think, are behind that ventilator. Where did Ferguson get this marvellous gem?"

"A young lady brought it to him this morning."

"Blonde or brunette?"

"Blonde. The real thing. Natural all over. But remember, I saw her first."

"I'll remember. He loves best who loves last. I'm with you directly, Alan. Find my shoes, will you? Confound it! What's become of my scarf? And my suspenders? Did I have any when I crawled up here to die, or did I leave them in my room? And to think of me wasting the whole glorious morning up here

with that sunrise going on under my back! Never again."

Item by item they found his socks and shoes and the rest of his impedimenta where he had strewn them on his retreat to the hammock.

"Have you seen this morning's *Bulletin?*" he asked, struggling with his too gorgeous purple and gold scarf.

"Not yet. Anything new?"

He countered Cunningham's question with another. "Has the Chief seen it?"

"No we have just finished breakfast and interviewing the beautiful bearer of gems. The Chief makes it a rule, you know, to read nothing until coffee has cleared his head."

"Good thing for once. Otherwise I should have been routed out at sunrise. Take a squint at the front page."

Alan picked up his paper, and whistled. The sober, unemotional *Daily Scientific Bulletin* had burst into print of the most violent type. Had the editorial staff gone insane, or had the compositors unearthed a cache of ancient fire-water? But sensational as was the print, it made but a poor second to the news. Never in the history of science had there been such a complete anarchy in what one is accustomed to look upon as the immutable regularities and commonplaces of nature. Alan ran his eyes down column after column, scanning rapidly item after item of the most incredible news that ever a paper printed.

The electrical disturbance of last night which had

delayed them for seven hours in the old Hudson tunnel was but the beginning of the outbreak. That storm itself was something new in nature. Evidently in some sort electrical, yet it had none of the characteristics of the ordinary electrical disturbance; there had been no lightning, no thunder reported from a single station. The *Bulletin* barely noted these extraordinary anomalies, passing rapidly from one sensation to another with little or no editorial comment.

Every wireless station in the world was hopelessly jammed. It was impossible to transmit or receive messages over distances even less than a mile. The electrical disturbance of last night had in some measure abated, permitting the working of the old ocean cables, but feebly. Last Monday night's warning had been ample to the efficient international service to get all their lines ready, and now the world was congratulating itself that the old cables had been kept in repair against emergencies that no reasonable being had ever expected to face. Brief reports of the prevalent disorders had been received by cable from all the chief cities and scientific bureaus of the world.

Without exception the reports were the same: complete disorganization of all activity depending in any way upon the direct transmission of waves or rays. Owing to the sudden interruption of all possibility of wireless control, the air service throughout the world was in total disorder, and passenger carriers were now as useless as ox carts. Innumerable wholesale wrecks of these essential machines were reported from all quarters of the world, but fortunately, owing to the

ban forbidding, except for experimental purposes, the older types of planes requiring a pilot to manipulate the wave-receivers, the loss of life had been negligible. The material loss, especially over the Atlantic and Pacific oceans, likewise over the central Asian desert where the freight carriers used the upper air lanes exclusively, had been staggering, sufficient to cripple the air service for at least three months, as the regular mid-week flights of heavy freighters had been in progress barely five hours when all transmission of waves, with the abruptness of a thunderclap, became impossible at precisely eleven o'clock, New York time, the preceding evening.

Eleven o'clock! The bald record of that hour at which nature had gone mad struck him like a bullet. The paper slipped from his hands. He stared at Wills in a dazed wonder that he could lie on his back, too indolent to light his own cigar, while all about him civilization was tumbling to ruin and the world flying to bits.

"Have you read it all?" he asked nonchalantly, buttoning up his vest.

"Not all, but enough! Why man, do you realize what this means?"

"I think so. Unless my brain has disintegrated; as everything else seems about to do, this probably is what an old-time parson would call the end of the world. Not the end, exactly, but the beginning of the end. It will be a little time on its way perhaps, but come the end must. You haven't read all of the news yet."

"And you lie up here without giving any of us a sign? What are you made of, man? Come on, hurry! We've got to tell Ferguson and get the whole crew to work."

"Hold on," he said, gripping Cunningham's wrist. "No use getting excited. I've been lying there four hours doing some solid thinking. My first impulse was yours. Then, I thought, why worry Ferguson until he is rested? He is all run down now, and no good for any constructive work until he has had a morning's peace and quiet. How is he feeling this morning, anyway?"

"Better. The sleep fixed him. We are all braced up, fit for anything."

"That is what I expected. Last night both Thompson and I were on edge, but this morning we got up feeling fine. Read this."

He picked up the *Bulletin* and indicated a brief paragraph on the second page.

"Against all of these disastrous events," ran the item, "a single exception stands out in grateful and striking contrast. The strange bodily and mental distress which first made its appearance among the metal workers last Tuesday, and which within twenty-four hours became epidemic throughout the world, has vanished as unaccountably as it appeared. The Department of Public Health announces that shortly before eleven o'clock last night reports began to come in from the city stations that the nervous tension was rapidly passing. By midnight, when the oceanic cables began to transmit messages, the first intelligence dribbling

over the wires was the welcome news that in Europe the tension had completely relaxed, with great suddenness, at 11:30 p.m. (N. Y. time), and the health of the entire population was again normal. The burns, or blisters alone remain; but these too are disappearing without a trace of discomfort or permanent injury. Later reports from the United States, of South America, Asia and the Australian Republic are to the same happy effect. Thus in all this time of stress we have much for which to be grateful. It is conjectured by some that the distressful conditions lately experienced, and those through which we are now passing, are both due to the same, at present unknown cause. What that cause may be we cannot, of course, conjecture until the receipt of more detailed reports. We trust that later information may show some at least of the phenomena to have been greatly exaggerated."

"How does that item strike you?"

"It is some comfort, at any rate," Cunningham answered. "For once there is a drop of ointment in the fly."

"A drop, I admit. But the fly is a whopper. Now, what about the suggested common cause for all these drunken freaks of nature? Can't you guess what might be at the bottom of it all?"

"I can, readily enough. But if I told you now, you would only think me crazy. Come on; Ferguson's fit for work. We can do no good talking here."

"Wait a minute," he demurred. "Perhaps I'm bordering on insanity too, and we had better recover

our minds before facing the Chief. Remember, I've had four hours of solitary thought—more consecutive thinking than I have done alone, perhaps, at one time all my life. So doubtless my mind is unhinged by the effort. Anyhow, as brother lunatics, it would be interesting to compare notes, just to see if you are as far gone as I am. What's your theory?"

In a few words Alan gave him the essence of what Miss Adams had told them of Jevic's doings from ten to eleven of the previous evening; also a bare statement of Jevic's 'first-shot' threat and the episode of the wrecked airplane, mentioning the Chief's discovery that the old wireless telephone receiver of the plane had been rotted by some unknown form of decay. He also recalled the Chief's conjecture that whatever had fused the plane had been partially jammed by the wireless receiver.

"So you think there may be more than a mere coincidence in the fulfilment of Jevic's prediction about his new star—as he called it—at eleven o'clock, and all these other things choosing the same time to begin?"

Put in the form of Wills' direct question, the tentative theory seemed too absurd for further investigation.

"On talking it over," Cunningham compromised, "it seems more reasonable to call the whole thing coincidence until we have more facts to go on."

With a shrug of the shoulders Wills assented.

"Perhaps you are right. Suppose you threw two sixes with a pair of dice several hundred times in suc-

cession. Would you call that coincidence? Or would you begin to suspect that somebody had been loading your dice?"

"The comparison is unfair," Cunningham argued. "Here we have only three things happening at the same time: Jevic's correct prediction of the new star, the sudden interference stopping all direct waves and rays, and universal recovery from an unaccountable epidemic. Three independent events might frequently happen together in the ordinary run of pure chance. There is no loading of the dice here; we have no continued run of several hundred similar events."

"Then you didn't glance at the Astronomical column in the *Bulletin?* I'll read you the item. It is all as you say, but with a difference. We have not a pair of sixes turning up continually in several hundred throws, but a chance even rarer. It is as if you tossed up a thousand dice at once, and they all landed with the six uppermost. Listen to this.

" 'Unparalleled in the history of science as are these disturbances on the earth, they appear but as the merest trivialities by those spreading anarchy and ruin throughout the heavens. The whole stellar universe, the vast outer swarm of spiral nebulae of which our galaxy is a distant member, all the material universe in fact as we know it, appears to be on the verge of some terrible catastrophe that must sweep it out of existence. But let events speak for themselves.

" 'Director Hardy of the Mount Roosevelt Stellar Observatory last night at 10:55 p.m. (N. Y. time) turned his newly perfected direct-vision spectroscope

on one of the remoter spiral nebulae for the purpose of testing the calibration of his splendid new spectrograph. The nebula which he selected is almost at the confines of the spectroscopically visible universe, Director Hardy having made this choice in order to put his new instrument to as severe a test as possible. The nebula was U. M. 2857, or in non-technical language, No. 2857 in that region of the sky which is roughly coincident with the constellation of the Great Bear. We wish to emphasize these details, as several amateurs observed a greenish patch of light in that region while Doctor Hardy's test was in progress.

" 'Turning his direct vision tube on U. M. 2857, the Director was amazed by the extraordinary brilliance of a green line in the spectrogram. Doubting the evidence of his senses—for the nebula is known to be spiral and composed chiefly of swarms of stars like our own galaxy—Director Hardy by means of his adjustable scale, rapidly verified that the brilliant green line did indeed coincide with the nebulium line. As he watched, the line first become double, further subdividing within a few seconds into five sharp green lines and a hitherto unobserved triplet of lines, two of which were yellow and the third blue. Almost instantly after this separation, the whole series of eight highly enhanced lines blurred, and in a few seconds not a vestige of one of them remained on the recorder of the spectograph. They had vanished. And further, simultaneously with their disappearance, the remaining lines and bands of the spectrograms thrown by the light of U. M. 2857, also disappeared.

Director Hardy compares the phenomenon to the blowing out of a candle flame.

" 'The interpretation of these facts—if indeed they are facts and not illusions due to imperfections in Hardy's instrument or in his direct vision process—would seem to be obvious. As far as our senses can tell us a vast swarm of millions upon millions of suns was instantaneously disrupted and reduced to less than gas at eleven o'clock last night. Nor did the destruction stop there. In the literal sense of the words this vast spiral swarm of hundreds of millions of gigantic suns has been annihilated as far as we are concerned. Not a trace of it remains which we can discover. The very atoms into which it was instantaneously shattered have been riven asunder and destroyed. This inconceivably vast mass of matter, swarm upon swarm of suns, most probably with millions of attendant planets, some of the latter no doubt as densely populated as our own earth, has been blotted from the heavens in the twinkling of an eye. We have at last witnessed the veritable destruction of matter, and that on a scale to appall the imagination.

" 'As this goes to press, Director Hardy and the entire staff of the Mount Roosevelt Stellar Observatory are analyzing and reducing all spectrograms taken within the last twenty-four hours.' "

Wills paused in his reading. "Now for your coincidence," he said, continuing. " '3: 00 a.m. *Stop-press bulletin from Director Hardy.* A rapid preliminary survey indicates that at least 50,000 of the remoter spiral nebulae, among them several giants, appear to

have been annihilated in the same manner as U. M. 2857. Compare my last report.'

"The *Bulletin* adds that it has no comment to make at this time except that later reports may indicate a radical defect in Hardy's apparatus, making all the phenomena illusory. That is precisely what I've been trying to persuade myself for the last four hours in that hammock. It is either an illusion, or——"

He stopped, unwilling as Cunningham had been to hazard a theory.

"Go on," said the latter, "what's the alternative?"

"Or some idiot has mastered the secrets of creating matter and transmuting matter into energy—in short has succeeded in unlocking the atom and performing all the operations which we have half-suspected must accompany the process—and is playing with his knowledge. As a slightly different hypothesis, the same idiot started out to open the atom and create matter, and got no farther than bungling into the methods of annihilating matter and releasing atomic energy without being able to control either. And as a conclusion from that," he ended with a laugh, "the same cheerful idiot is about to be destroyed himself, and with him all the rest of us. It would be worth the world to us just now to know what Jevic himself imagines he has done. Does he think he has carried his work clear through to the end?"

"It is impossible to say. Miss Adams seemed to imply that he had. But she doesn't know enough about mathematics or the nature of Jevic's work to be able to form a competent opinion. His cheerfulness would

seem to imply that he finally did master the initial value of that arbitrary constant which was holding up all his investigations."

"Do you know what I think? Jevic is fooling himself. By some ghastly mistake he has persuaded himself that he really has settled the correct initial value of his arbitrary constant, whereas he has simply made a brilliant series of blunders. He has been out of sorts according to all we know. Now, anyone who works with Jevic's kind of stuff knows how easy it is to make mistakes that neutralize each other, giving a totally false result that looks as sound as gold. For all that, the false conclusion is as dangerous as poison. Only careful experiment will reveal the truth or falsity of any conclusion reached by the unaided reason. Jevic is experimenting now with his erroneous value of that essential constant. In reality he is as far from complete knowledge as he was a year ago. That, in the light of your account of his secretary's story, is my theory revised to the present moment. I may change it when the world goes up and everlastingly out."

"Come on, you two!" shouted a voice behind them. "I've wasted half an hour already ransacking the whole plant."

Thompson's excited head showed above the level of the roof.

"Keep cool, old man," said Wills evenly. "Come up six steps and give us a full-length portrait. What's the row? Is the blonde leaving?"

Thompson bounded up the last few steps, and stood gesticulating by the trap.

"Good Heavens, man, don't waste time trying to be funny," he fairly yelled at Wills, "haven't you read your paper? There's an extra out now—the thing, whatever it is, is getting nearer. The sun's affected; metals all over the earth are going rotten. Come on! Report at once to Ferguson, both of you. MacRobert's orders."

He turned, and was halfway down the stairs before they realized his message.

"Whose orders?" Wills shouted after the vanishing figure.

"MacRobert's!" came the answer, as Thompson disappeared at the landing. "In charge of the plant till further notice."

"I think we had better go down, if that's the case," said Wills, taking the steps three at a time. "Mac in charge! Who sandbagged him?"

"Who what?"

"Who knocked him on the head and dragged him in here by the heels? We'd have given a million for a look at him yesterday, and now he's running the whole circus. Whose brawny arm——"

"Vera's," Cunningham hazarded, as they took the last flight together in an unseemly but involuntary slide.

CHAPTER XVI

The Second Extras

"NOO, dinna get excitit, Mr. Wills, juist because I'm here," MacRobert began in his worst brogue.

"'Excitit' did you say, Mac? Please translate." Wills took a mean delight in deviling Mac about his accent, which only cropped out when the big Scot was about to burst with repressed emotion. It was his safety-valve.

"I asked you to behave like a reasonable human being, Wills," MacRobert returned without the least suggestion of a burr. "As Thompson has doubtless told you, this is the crisis of our lives. We are either at the beginning or end of the world. It is for us to determine within the next few hours which it shall be. Have you read this morning's *Bulletin?*"

"Yes. I have read and digested every word."

"Well, if we can't find out within the next ten hours what is causing the trouble and some way to remove it, we may as well say our prayers. For we shall be at the end of everything. If by eleven o'clock tonight we are no wiser than we are now, we never will be. There will be nothing to know. Everything will be wiped out as those nebulae were."

"Then it's true. The nebulae actually were annihilated?"

"It has been confirmed by sixteen of the larger stellar observatories working independently. Only two of the sixteen used Hardy's methods in reducing the spectrograms. The hypothesis of defects in either the apparatus or process used is untenable. Those nebulae were annihilated."

"Certainly is something. It is better than false optimism. Why the ten hour limit?"

"Merely a scientific guess. An examination of the spectrographic records indicates that the nebulae were destroyed periodically—a sort of rhythm of destruction spreading out in more or less regular beats, something like the ripples on a pond after you have thrown in a stone. A rapid calculation which I made half an hour ago shows that if the main disturbance—the cause of the ring-like spreading of all the destruction —is still in operation where it started hours ago, then it will only take the waves of destruction about ten hours more to reach the Milky Way. I assumed, of course, that the 'waves' of whatever is causing the destruction will continue to spread at their initial rate, which is immeasurably greater than that of light. From the Milky Way to us at the same speed will only be a matter of a few seconds. There is a probable error of fifteen minutes in my calculations, so we may look for the end somewhere between fifteen minutes before and fifteen minutes after eleven o'clock tonight."

"But," objected Cunningham, "your calculations must be wrong somewhere, Mac. No physical thing, no kind of matter or form of energy, can travel faster than light. That theory is indisputable."

"Theory exploded by facts. Those nebulae have been annihilated by means or agencies unknown. But the means appear to progress outward from a fixed center as if in waves. This I have from incontestably accurate reductions of the spectrograms by the sixteen observatories. On these observed facts I have based my calculations. No known theory fits the present facts because they are new in kind, wholly outside of anything we have experienced. The chief fact is that matter has been destroyed—annihilated!—on a scale that is beyond us to imagine. My deduction from the facts does not admit of argument. It is correct. We have no time now to haggle over theories; we've got to find out whether we can beat the facts. Argue tomorrow—if we're still in existence."

"Tell him your theory, Wills."

"My theory is that some lunatic on this earth has blundered onto half the great secret. He is able to destroy, but not to create matter. In destroying matter he is letting loose infinite whirlwinds of energy, irresistible tempests of annihilation. In not being able to create matter, he is unable to control the release of the energy or in any way to modify the rate of destruction. His discovery has burst from his control and is getting the better of him."

"Mine too," snapped MacRobert. "That's why Ferguson put me in charge. I disagree with you on the last point. If the rest of the theory is right, the idiot responsible for this orgy of ruin may still have it in his power to stop the destruction before it reaches us. The very sequence of all these disasters suggests half-intelligent control. It is as if some hillock of con-

ceit were amusing himself by trying out his half-discovery in a vast series of insane practical jokes, before beginning to play the real instrument."

"What makes you think that?" Vera interposed quickly.

"The *Bulletin* reports on the airplanes."

He unfolded the *Extra* and read:

" 'All attempts to utilize the reserve machines which of course, not having started on yesterday's flight were unaffected by the disaster, have so far been singularly frustrated. The metal fixtures, from the aluminum freight tanks to the hardest and most durable titanite alloy of the screws and essential working parts, are decaying rapidly under the strange influence of some new and unaccountable disease of metals.

" 'At an early hour this morning six hundred of the reserve freight planes rose from the platforms at Odessa with full cargoes of grain for Vienna. The first three minutes of the flight were in every way normal, and the shippers began to take hope that with continued favorable ray-transmission, the recent disaster might in a great measure be retrieved.' "

"Hold on," said Wills. "In the last report I read all wave and ray transmission was hopelessly jammed. When did the interference break down?"

"At about five this morning, New York time. It did not break down completely however. The jamming is still there, but it comes and goes in pulses. The receipt of a wireless message gave the shippers their first hint to try the reserve planes. I shall not take time to read it. Just keep in mind while I read this

other that the wave and ray transmission follows exactly similar beats. In one phase transmission is possible; in the next one all waves and rays are jammed at the transmitter. And so on, like the rise and fall of the tides, but with a much shorter period."

Wills nodded. "All right; I understand. Go ahead with the report of the reserve planes. You had them started successfully for the first three minutes of flight."

"'. . . the recent disaster might be in great measure retrieved. But this hope quickly perished. Within five minutes after starting, each of the six hundred planes had crashed to the ground, a total wreck. Examination of the wrecks at once revealed the cause. The titanite of the propeller bearings had cracked and split into shapeless fragments, completely wrecking the steering gears and shafts. Hasty tests of the titanite alloy showed it to have become so brittle that a light blow with a mallet, in some cases even a mere jarring with the bare hand, caused it instantly to fly to pieces.

"'It is recalled that the greater number of the reserve machines were completely rebuilt at the same time about five years ago. Mechanics are of the opinion that some defect in the special pouring of the alloy from which the titanite bearings were manufactured at the time, has remained undetected till the present, only to reveal itself in this grave crisis. A progressive deterioration of the alloy, these experts point out, could well start from some imperceptible impurity, passing unsuspected for years so long as the engines were subjected to no strain. Experts, then,

acquit the engineers who accepted the machines for the Russian Republic of all blame. In this acquittal the entire scientific world will concur, reserving, however, its opinion as to the ultimate cause of this fresh disaster which has overtaken the Russian shippers.'

"The scientific world will probably have to hold its patience longer than it anticipated," MacRobert remarked, looking up from the paper; "perhaps even to the end of eternity. Listen to these. They are just a string of bulletins from Odessa and Vienna; not a word of comment on any of them. These, to my mind, are particularly significant. They seem to suggest a possibility—only that, mind, and nothing more—that what is happening to the Russian grain shippers is Jevic's revenge for what we did to his Nyanza plants. If this guess has any value, then perhaps Jevic is still able to control the destruction. If not, it is all simply the gentle beginning of the end. I say 'perhaps' advisedly. The thing may still be quite beyond his control, and only acting in this semi-civilized fashion because that is the nature of the beast before going stark mad—as it has done up among the nebulae. Listen. All times given are New York time.

"'*Odessa.* 9: 10 *a.m.* The aluminium grain tanks of the wrecked planes have disintegrated. Such tanks as fell practically intact have burst under the pressure of the grain. The aluminium can be crushed to powder in the hand.

"'*Odessa.* 9:35 *a.m.* Tests of the undamaged freight planes still in reserve show that all are in perfect condition.

"'*Vienna.* 9:40 *a.m. Special despatch from the People's Press.* 'It is learned that agents of the Consolidated Power Corporation last week purchased the entire reserve stores of grain in the communal granaries. The Directors of the granaries explain that the sale was made at a great profit to our people, and that they anticipated no shortage as the contracted shipments from Odessa were due to begin this morning. The Power Corporation represented that our grain, being already sacked and in this city, was more available for shipment to their several construction camps in the mountains than would be the new Russian crops. And further, they pointed out, the Russian harvest being about to begin, there would be no delay in our shipments from Odessa of the old grain for which we had contracted provisionally, the provision being that we should have the grain only when the new crops began to move.' "

"Note that devilishness!" the Chief exclaimed. "He had already planned his starvation coup when he came to see us. It is all clear now. The Vienna people were only to get the old crop when the new was on the move; Consolidated swindles the Vienna Directors out of their own reserve by promising that the Russian crops shall move immediately; having cornered the reserve Jevic shoves the price of power up three hundred per cent. in Russia, stopping the harvest; Odessa then is unable to part with its own reserve of last year's harvest, and the starvation of Europe begins at Vienna. Whatever happens I'm glad we smashed his African plants! Go on, David."

" 'To accommodate the Corporation, also to benefit our people, the Directors of the granaries parted with the reserve stocks at a handsome profit, planning to apply the same to a substantial reduction of price on the new importations. Our Directors, we feel, are in no way to blame for the alarming situation now confronting us. The Power Corporation refuses to sell us so much as a single sack of grain, even at double the price they themselves fixed. They point out that if the destruction of the planes continues, their employees in the mountain camps will be dependent solely upon our stores.

" 'The Corporation has thrown a heavy guard about the granaries. The situation is at an impasse.

" '*Odessa.* 9:55 *a.m.* It has been accidentally observed that the titanite fragments of the wrecked grain carriers have unaccountably become normal again. Tests show the alloy to be once more as sound as on the day it was poured.

" '*Odessa.* 10:00 *a.m.* The aluminium fragments of the wrecked grain tanks have recovered their natural state. It is impossible to detect any difference between the fragments and standard specimens in the technological laboratories by any test whatever. The possibility that standard samples and the fragments are both in the same deteriorated condition is ruled out by the nature of the tests. All chemical and physical reactions for all of the specimens are strictly normal.

" '*Odessa.* 10:05 *a.m.* The metals of the reserve planes not affected by the disaster reported in previous bulletins are undergoing a similar deterioration, rendering them useless.

" 'Odessa. 12:00 a.m. Continued observation and tests show that the reported brittleness and rotting of the metal work of the planes is periodic. The metals are normal for twenty-five to thirty minutes, becoming brittle and unusable for the next fifteen or twenty, finally recovering the normal state for another period of approximately half an hour. This cycle of changes appears to be recurring indefinitely. Possibly it is caused by some disintegrating pulse of extraordinarily long wave-length.' "

"Possibly," MacRobert repeated drily, lowering the sheet.

"Just look at that fiendish game of cat and mouse Jevic is playing with people who must have bread!" the Chief burst out. "Half an hour's hope that the planes may be all right! half an hour's perfect soundness to tempt the shippers to make the trial. Then fifteen minutes of rottenness to wreck any machine foolhardy enough to start. It is damnable! He hopes by keeping it up to get them to attempt short flights, grounding the planes during the bad intervals, in the hope that the unstrained titanite may last through the fifteen minute spell. No doubt he will suggest that they bind up the aluminum grain tanks in sacking to stand the pressure of the grain while the machines are lying low!"

"Never mind," said MacRobert, "by eleven o'clock tonight either none of us will ever need another loaf of bread, or we shall have broken Jevic's back and Consolidated Power at one wallop. Just listen now to this last gem of the collection. This one is sent by cable like the rest. The scientific men are not trusting

those thirty minute spurts of wireless transmissibility, whatever the grain shippers may do. This is from my venerable friend and teacher, Professor Brown of Cambridge.

"'*Cambridge, Eng.* 12:00 *a.m.* The solar observatory reports unprecedented activity on the Sun. An outburst of spots unparalleled in the history of astronomy is taking place with terrifying rapidity. It almost appears as if our luminary, upon which for millions of years this Earth has depended for the necessities of warmth and light with all their attendant comforts, is about to explode and disappear from the sky, leaving us in total darkness and absolute cold.

" 'But whether we are about to plunge into the cold of an eternal night, or whether the present outburst is only great but not final, one thing may be predicted with absolute certainty. Within a very few hours the Earth will be staggering through the most terrible electrical storm in its history. All communication by telegraph or wireless, all control of aerial navigation by rays or waves, and all industries depending upon ray-controlled or wave-directed machinery will cease instantaneously. All workers are warned to keep away from such machinery. The precautions customary during electrical storms must be increased a hundredfold. The coming disturbance is not a storm but a chaotic fury.'"

MacRobert tossed the paper aside.

CHAPTER XVII

The Spy

FOR several seconds they stood staring helplessly at one another, all except MacRobert and the Chief, who managed to conceal what they must have felt. White in the face, Miss Adams unconsciously crept over to Vera. The two girls stood apart, their arms around each other's waists, Vera the less agitated.

"Cheer up!" she said. "If things do go to smash, how glorious to be in at the end and see it all. Just think, but for the accident of living in our days, we might all have died a hundred years ago of the mumps or chickenpox."

"Or tobacco-heart," Wills added, lighting a huge cigar as black and evil smelling as a tarred rope.

"I don't believe it's coming," said Miss Adams hopefully, almost wistfully. "It is so nice just to be alive. I love life! Nothing will happen—Oh!"

A terrific peal of thunder burst, crashing directly over their heads.

"Oh!" she cried again, clapping her hands to her ears when the peal ceased as abruptly as it had begun. "Oh—I can't stand thunder! It scares me to death. Don't laugh! it's childish, I know; but I can't help it."

Soothingly Vera put the poor girl's hands down. "It's nothing to be ashamed of, my dear. I feel just the same way about mice."

MacRobert stood perfectly still, as if expecting a second and more violent detonation.

"Shot number one," he remarked quietly.

"Number two," Ferguson corrected him. "The first killed that poor fellow twenty-four hours ago when it brought down his plane. Well, MacRobert, what do you propose doing first? Have you any definite plans?"

"My plans were all made before I left my room this morning. I propose to carry them out. First, every man will keep a cool head. Every woman, too," he emphasized, glancing at Miss Adams, "because you will both need all your wits very shortly. Second, we will all take our time and do nothing in an excited state of mind. Either we can finish our job and stop the destruction within nine or ten hours, or we shall never finish another thing on this earth. If your particular assignment would take nine hours to carry through on an ordinary day, take your full nine hours to it now. According to my calculations we have just a little over nine hours left in which to get a grip on things. Third, we will at once proceed to the business for which we called in Mr. Wills. I suspect it may be less trivial than it seems. Miss Adams, please let Mr. Wills examine that interesting ring which Mr. Jevic gave you as a parting shot—pardon me! as a parting gift, I meant to say."

June handed Wills the marvellous little hoop of

rose-tinged whitish metal thickly studded with a small galaxy of precious stones.

"Take your time, Wills," MacRobert advised coolly. "An hour, if you like. Don't drop that thing if another thunderclap should surprise us."

"No fear," answered Wills. "That clap was only the prelude, any way. The real concert will probably not start for another ten minutes yet," he went on, examining the ring with studied detachment.

"Isn't it a beautiful piece of work, Mr. Wills?" Miss Adams asked, bravely hiding her dread of the predicted storm.

"It is indeed, Miss Adams. A truly marvellous piece of mechanism! Mr. Jevic, I suppose, has the mate to this?"

"He has one something like it, if that is what you mean," the girl admitted with perhaps a shade of reluctance. "But this is much the finer of the two. He took this one off his left little finger; the other he wears on the middle finger of his right hand. I know that he prized both inestimably. Mr. Jevic, whatever his faults, is not mean."

"That I can well believe, although it might cost even so generous an employer as Mr. Jevic a pang to part with this unique jewel. It must have taken the labor of a generation of Chinese craftsmen to make this. Just look at the delicacy of the intricate workmanship! And that superbly evil stone smouldering like the eye of a sleepy devil in the center of all these lesser gems—what a mesmeric fascination it has! Cunningham, what do you say it is?"

Cunningham shook his head, for gems were not in his line. Wills continued his minute examination in silence for some seconds. Suddenly he looked up sharply at the visitor, who was watching him with something like apprehension in her eyes.

"Miss Adams," he demanded in the unsympathetic tones of a prosecutor cross-examining a stubborn witness, "what was the subject of Mr. Jevic's conversation with you last night?"

"He talked about the recent discoveries in the Consolidated Laboratories part of the time."

"And the rest?"

"About chance, and how he could predict new stars."

"Which apparently he can do," Wills admitted thoughtfully. "Now on what topic did he dwell most?"

"On the new work in the laboratories."

"The nature of that work, Miss Adams?"

"The conversion of polonium into lead, the reversal of the process on a commercial scale, the control of both processes, and how all of these results are of the highest importance for solving what Mr. Ferguson calls the great problem."

"Then Mr. Jevic believes that the polonium results are vital for getting at and controlling the internal energy of atoms?"

"He certainly does, Mr. Wills. He emphasized it so often that I began to be bored."

Wills suddenly changed his tone. An accusing, scornful inflection put an edge on his next inquiry that cut like a razor.

"And this morning, Miss Adams, when Mr. Jevic presented you with this ring, what did he say about our ray chambers? In particular what remarks did he make about Thompson's new rays and my improved dial scales?"

For an instant the girl hesitated. Her face became like white lead.

"Oh!" she gasped.

"Why do you hesitate? Answer my question instantly!"

"Oh, Mr. Wills! I am not what you think——"

"What do I think you are?"

"I don't know," she confessed miserably.

"Then why do you hesitate?"

"Because I thought another thunder-clap was coming!" she answered triumphantly, smiling. "But it wasn't; and I'm all right again. For a moment the dread of the thunder made me quite faint."

"Never mind yourself! What did Jevic ask you to do with this ring?"

"Nothing, Mr. Wills," she answered with cold dignity, "except to wear it."

"A sort of engagement ring, eh?" he snarled at her with acid sarcasm.

"I don't understand," she said simply.

"Yes, you do! Why are you getting red?"

This was too much for the insulted young woman. She drew herself up, sheerly beautiful in her indignation.

"You do not like me, Mr. Wills."

"I do not!" he snapped. "Now answer my ques-

tion. Did Jevic ask you to leave this ring in either Thompson's ray chamber or my own? Answer quick! Yes or no?"

"No!"

"You are sure?"

"You needn't insult me. I said No."

Wills stared long and coldly at her. Then, deliberately turning his back on her, he faced MacRobert.

"I hate a liar," he said venomously as he turned. "MacRobert, my first report to you as our temporary Chief is of an extremely disagreeable nature. I dislike incriminating a woman, but the case is desperate. Miss Adams is a spy, sent here by Jevic."

She sprang forward angrily. For a moment it looked as though she was about to attack Wills, and he hoped she would. A stinging slap across the face would have been no less than he deserved. But with a despairing glance at the set enmity of Vera and Thompson she stopped irresolutely. MacRobert's impassive face decided her. She stepped back, her intention unfulfilled.

"Further," Wills continued, "the polonium story is part of Jevic's plot. For some reason not clear to me, he is playing for time. Every physicist in this laboratory knows that polonium will lead us nowhere in the problem of unlocking the atom and controlling its internal energy. Miss Adams is, among other things, Jevic's decoy to start us off at the eleventh hour on a false scent. Every minute is vital to us now. If we follow many blind trails we shall never get out of the woods. But doubtless," he concluded, turning to

Ferguson, "you at least were not deceived by the polonium rubbish. You saw through Jevic's motive in sending Miss Adams here with it."

The Chief nodded. The accused girl stood by Vera's side, but she was alone. Her compressed lips and terrified eyes betrayed her secret conviction that in all the circle about her she had not one friend. She said nothing.

"You are undoubtedly right, Wills," said Ferguson. "I also noticed the ring with its central stone of pure radianite the moment Miss Adams entered our breakfast room. That, in fact is one reason for my delay in starting work. The other was my anxiety to have MacRobert's advice before beginning. Of one thing, however, I am certain; and on that, apparently, we disagree. Miss Adams personally," he declared, laying his hand on her shoulder, "is innocent. I have proved it to my own satisfaction, also, I believe, to my daughter's."

Vera nodded, but Alan knew her well enough to read that assent at its true value. Miss Adams turned and embraced her with a sob.

"She came here on her own initiative," the Chief went on rapidly. "Combining a careful observation of her character and sympathies with a judicious display of Consolidated's greed, Jevic could predict to within ten feet where she would be three hours after he had discharged her from his laboratory. Of course she came straight to us. It was the only rational move for one with Miss Adams' sympathies. Beg her pardon, Wills."

"Shake hands! Miss Adams, and call it square. We all make mistakes. But," he added with a laugh, "I make none when I see so perfect a specimen of pure radianite as this." He held up the ring, and June reached eagerly to take it from his fingers. "No you don't," he laughed. "I want first to perform a little experiment on it."

"Perhaps you would like my souvenir to compare with Miss Adams'?" MacRobert suggested. "Jevic made me a small present too when I quit Consolidated. We also parted on the best of terms."

He fished a slender metallic rod like a pencil holder, about six inches long, from his vest pocket. It also was studded with rare stones, like June's ring. All the men recognized at once what the object was, despite the art that had been lavished upon it to make it resemble as closely as possible some costly trinket. Wills' eyes gleamed.

"The very thing!" He turned to Miss Adams. "That little rod will save me the trouble of making a trip to the ray chambers. I trust it will not cause you to break any other engagement you may have with Mr. Jevic!"

"What do you mean?" she flashed back at him, as red as a rose.

"Oh, nothing. Only it won't be necessary now to take your beautiful ring within a hundred yards of Thompson's apparatus or of my own new dial scales. However, we're friends now. Well, Mac, I was just going to ask if by any chance you had one of your late patron's radianite receivers concealed about your

clothes. Thanks; just right. The full size variety would scarcely have fitted this ingenious ring."

"What a beautiful pen!" Miss Adams exclaimed as Wills took the slender rod and tapped it gently against his knuckles.

"Yes, isn't it? Only it writes rather a strange script. It is one of those celebrated instruments that first made Jevic famous."

"Surely, that can't be a visual recorder?" Vera asked incredulously. "It is only a tenth the commercial size."

"But that's just what it is, Miss Ferguson," Wills asserted. "A perfect gem of workmanship—almost as neat, in fact, as Miss Adams' ring. A whole city of Chinese jewellers must have sweated over these two masterpieces; no westerner would have had the patience."

He slipped the ring over the rod, adjusting both until the flat radianite inset at the center of the rod fitted snugly against the under-setting of the large round radianite gem which formed the centerpiece of the ring. All of them, except Miss Adams, were now fully prepared for what happened. As the adjustment gradually became perfect, the familiar shrill note of the telephotoscope, but very faintly, sounded through the conservatory.

"Wonderful invention, wasn't it?" Wills remarked, turning to June. "Jevic deserved the millions he made out of this, even if it did give him his first footing in the world of high piracy. Look over there."

He indicated a vacant space near the begonias, about

six feet from where they all stood. The atmosphere in that spot simmered like the air above a gas-flame; and very distinctly the image which most of them expected to see, took definite shape. It was not a flat image such as those, still most common, projected on screens by the first forms of Jevic's telephotoscopes, but a solid, apparently tangible miniature of Jevic's private laboratory which was being transmitted by the instrument. Even the Chief exclaimed at the brilliant purity of the colors and the clear-cut distinctness of that wonderfully perfect transmission. The whole solid picture, sharp and vivid to its least detail, might have been contained in a four-foot box.

"It is Mr. Jevic's private laboratory," Miss Adams exclaimed, involuntarily starting toward the brilliant image.

"Quick! everybody," ordered Wills, "see what Jevic is doing before he shuts off at the other end!"

For perhaps fifty seconds they had a vivid reproduction of the interior of Jevic's private laboratory. Everything, with one exception, appeared to be precisely as they had seen it twenty-seven hours previously. But to three of them that exception was singularly startling. Jevic was seated at his work-table with his back toward them, clad, not in the usual dress of a successful business man such as he had worn on his visit to them, but in a coarse red shirt, dingy blue trousers and heavy top boots such as are worn by the lowest grade common laborers. Instantly Cunningham recognized the shirt as that which Jevic had shown

them hanging behind the portière of the warrior and dragon. So, evidently, did Vera.

"He thinks he has beaten us!" she exclaimed.

"Yes," Ferguson muttered. "The theatrical ass!"

"And he's celebrating his victory," Cunningham said, "by taking it out on those poor devils in Vienna who need bread."

"Don't be too sure," Wills remarked. "Miss Ferguson is perhaps right. He thinks he has beaten us. That doesn't mean that he has."

"What's he up to?" MacRobert demanded of June. "You ought to know what that chart is on the table before him. I can't make out the details, the image is too fine."

"It is what he calls the main sheet of his calculations," June answered. "I recognize it by the brown square pasted in the top right-hand corner. The diagrams are on that sheet."

Wills' hand shook, and the image blurred. In a second it had vanished.

"I would give everything I ever hope to possess for one good look at that sheet!" MacRobert exclaimed. "Wills, can you bring it up again?"

"I'll try," said Wills. "Sorry my hand shook, but it was getting cramped," he apologized, once more striving to make the adjustment. "I'll be more careful this time."

"Give it a shorter focus and bring out the detail a little better. Everything depends upon that sheet. If I can see it for ten seconds we are saved; if not,

we're done for. I can memorize the look of it in one good stare. Now!"

Wills made the adjustment, and with a shrill hum the image flashed out.

"Send somebody for a pair of field glasses, quick! before Jevic suspends," MacRobert ordered, dancing with excitement.

"I'll go myself." Ferguson hurried from the conservatory.

"That's good, Wills! Bring it up a little more—not too much, or it will blur. Right! I can almost get a glimmer of the diagram with my bare eyes."

The shrill note which the rod emitted became deeper, and the image before them flashed into brighter color and higher relief. Ferguson hurried in, breathless. MacRobert snatched the powerful field glasses from his hand.

"We win!" he cried, adjusting the glasses. "I can see perfectly. Hang! he's getting up. Look at that—his great carcass directly between me and the sheet of calculations. Oh, if he would only go over to the fountain and take a drink; one good look is all I need."

In the image they saw Jevic rise from his seat, stretch his arms, and look curiously round. Once he turned his head directly toward them, and instinctively they sought shelter, although he could not by any possibility see them until setting his own visual recorder. Something in his attitude warned them that he was suspicious. Then it was that Alan's one inspiration came—thirty seconds late.

"Photograph it!" he cried, "when he moves aside."

Vera was gone instantly. What would Jevic do? He turned his head, listening.

"He notices the buzzing at his end," said Wills, "but doesn't place the sound yet. Look!"

The image brightened several points. Jevic stretched out his right hand, closely scrutinizing the rings on his fingers.

"Which ring is the mate to yours, Miss Adams?" MacRobert asked, never once moving his field glasses from the image.

"That on the right middle finger."

"Confound it!" he muttered, "why doesn't he stand aside and give me ten seconds at his calculations?"

Jevic quickly shot out his right hand. As if the thing stung him, he quickly removed something from his middle finger, and held it up against the light from the high northern windows. Almost immediately he sprang aside in alarm, exposing the main sheet of his calculations to MacRobert's glasses. For perhaps three seconds Jevic stood thus while MacRobert gazed. Then he seemed to twist the ring which he held, and in a flash the telephotoscopic image vanished just as Vera returned with a camera.

"Long enough?" asked the Chief.

MacRobert groaned. "No. I only had about five seconds at the most, and needed five minutes. I never saw such an army of equations——"

"Here goes!" cried Wills, dashing June's ring to the tiled floor.

"Oh, my beautiful ring!" she exclaimed, as Wills

brought his heel down on the marvellous jewel, crushing the radianite and lesser gems to powder.

"Sorry," Wills apologized, "but we can't afford to have Jevic suspect us. What about it, Mac? Didn't you see anything?"

MacRobert was strangely crestfallen. "I saw enough to fill me with despair. Here I've been blowing for five years that I could memorize any set of equations or page of symbols at a glance; and when all our lives depend on it, I fail. But I saw something. The essential clue to the whole mystery is in those calculations. There must be two hundred or more sets of equations. I grasped only their theme, none of the details. Oh, for a few minutes with that sheet!"

"I could kick myself," groaned Cunningham, "for not thinking sooner of the camera. There was ample time to photograph the whole image in that few seconds. Then we could have thrown an enlargement on a screen, and you might have studied Jevic's work for hours. Will somebody kindly shoot me?"

"No," said Vera. "It was my fault. I should have sent Thompson for the camera. He knows where they are kept, I don't. I wasted five priceless seconds finding the right shelf."

"It wasn't your fault, Vera," said MacRobert. "It was my own for being such a conceited fool as to think that I could take in a thing like that by looking at it. I should have thought of the camera before ever ordering Wills to bring up the image the second time. If we get out of this scrape I'll never crow again. Let me think what's to be done."

He strode into the breakfast room, drew up a chair to the table, and sitting down, buried his great red head in his arms. Vera looked longingly after him, but forebore following.

"Don't fret, Miss Ferguson," said Thompson, going over to her. "Mac will find a way out. That little slip will only put him on his mettle. Come! cheer up. This begins to make it interesting. Where's the sport in a fight unless the other fellow seems to have all the advantages?"

"That's what I say," Wills seconded heartily. "I was beginning to be bored with the ease of our victory. And as for Mac going under when the whole universe expects him to stand up, the thing's inconceivable. Why, he wouldn't even allow himself to be beaten at a game of golf!"

"I believe in David," said Vera, "even if some people don't. Thank you men for sticking by him. But then it's just like you. None of you would run away before the fight begins."

"I might," Wills confessed, "if my legs hadn't the trick of becoming paralyzed whenever there's danger in the air." He stooped down and picked up the flattened setting of the wrecked ring. "I would have spared your ring for you, Miss Adams," he said, "if there had been any way of throwing the transmitter out of gear. But you see there wasn't. All this fine grape and pomegranate filigree is a most ingeniously disguised telephotic transmitter. I need scarcely point out the extreme delicacy of the work; it is a masterpiece of mechanism, constructed to operate perma-

nently, the motive energy being supplied by that fine radianite which I unfortunately had to smash. I should have liked it for myself. All this filigree has been welded together in such a way that it is impossible to throw out the transmission. So while Jevic, by merely slipping a pin, can no doubt fix the mate to this so that it no longer transmits, this fine ring which he so generously gave you is a strictly one-way affair made to spy upon its wearer's surroundings every second of the day or night. All Jevic had to do in order to follow your slightest move and learn what was going on about you, was to slip his own ring over a receiving rod similar to MacRobert's. As a careful observer he would do so once every half hour. No doubt he was just on the point of making an observation when by smashing your beautiful radianite I broke his connections. Or he may have come out of his day dreams in time to notice the buzzing of his own transmission when we got into touch with him. In any event you will see how dangerous—from our standpoint—this little piece of jewelry would have been in any of our ray chambers. Of course, even as it is, the thing transmits a faint impression of our whole plant. But it is like looking through a blanket at the sun when you try to make out an image taken more than thirty or forty yards from the transmitter. Would you care for the remains?"

"No, thank you," she said stiffly.

"Then I shall keep it as a souvenir," he said, slipping it into his vest pocket. "Never mind; I'll give you a better one when we meet next time."

"Which will probably be in Heaven," remarked Cunningham pleasantly, "unless Mac's brain begins to smoke pretty soon."

"Do you know," said Vera, "my respect for Mr. Jevic has gone up a hundred per cent? His rings were my chief objection to him. Now that he has shown me what use he can make of one, I freely acquit him of the charge of wearing jewelry like a——"

Suddenly she was interrupted by a second peal of our thunder, this time on right, which jarred the floor and walls with explosive violence. Miss Adams seemed to shriek, but the volley was so terrific that no one actually heard her. They only saw her lips part and remain open. She was as pale as death, and utterly, unreasonably terrified. When the frightful jarring finally ceased she was clinging like a frightened child to Vera.

"It's over," said Vera, comforting her. "There won't be another probably for an hour."

The shot seemed to have aroused MacRobert. He leapt to his feet, once more the leader, again strong and confident.

"We have wasted no time," he began. "Without this knowledge my original plan would have led only to half a victory at the best. We might have stopped the destruction, but Jevic would have had us in the palm of his hand. I know what his wearing of the red shirt means; he once bragged to me about it. He thinks he has won, clear through to the end. If he has, we must get the same knowledge that he has, or the world is his slave.

"My glance at that sheet of calculations showed me this. The clue to all of the recent disasters will be revealed by a close study of Jevic's work as represented on that sheet. When I say all, I speak literally: wreckage of shipping planes, annihilation of nebulae, plague of sun-spots, this storm even—all this madness of nature. Better, a mastery of those calculations will show us what physical steps to take in order to stop the ruin before it wipes out everything. Of all this I am certain.

"The next is merely a conjecture. I am coming round to Wills' theory. In the image Jevic seemed cool enough. But I now suspect that his coolness is without warrant. This catastrophe which he has started in the belief that he is its master, able to stop it when he wishes, may be beyond his control without his yet realizing the fact. If he has made a mistake in his work he may not discover it in time to correct it and so save the universe from annihilation.

"Suppose that he actually has blundered in ignorance. It will take more than our eloquence to convince him of the fact until too late. He is self-confident. Any appeal from me for a chance to verify his work will be met with the obvious retort that we simply wish to steal his discovery of the release and control of atomic energy. But for this I should go at once and ask to see that sheet. The direct way being closed we must resort to the indirect. Here are my plans.

"First, we shall carry out my original scheme of discovering, if possible, the nature of the destructive

pulse and the kind of waves and rays necessary to stop it, if any such exist or can be generated. I have already made a long start on the theory, and we can begin practical work in the laboratories at once. On reconsideration, however, this plan offers but a very slight chance of success. Our great, in fact, our only hope is in the alternative.

"Second, then, I must have the main sheet of Jevic's calculations for intensive study. If Jevic has blundered, this is our only possible chance of stopping the ruin he has started. And if he has not blundered, it is our only chance of keeping abreast of him on the great problem and rescuing the world from slavery. By ourselves we might catch up with him in three months. By that time he would have completely conquered the world and we, along with all the rest, would be his slaves. So this second is the only way out. I shall need at least four hours on that sheet before being able to give any definite instructions for practical work. That means I must have the sheet by six o'clock. It is now three.

"While I stay here and carry out the first plan with the rest of you, one must go and get Jevic's main sheet. I should send Vera, for she gets on well with Jevic, but that I must have her to help me in my numerical work for the ray and wave scales which I propose to try. Cunningham, you are the only other one who stands the ghost of a chance of getting near Jevic."

"He can't!" Miss Adams, who had now had time to collect her wits, interrupted. "How is he to get into

Mr. Jevic's private laboratory? If he telephones—supposing that he can—Mr. Jevic will never let him in. And he can't batter down that door."

"Do you know the combination for today?"

"I did this morning. But as you know, Mr. MacRobert, it has been changed since, for the simple reason that I was discharged and am no longer to be admitted. But let me try! Send me with Mr. Cunningham, and I'll convince you all that I am what I am and not what you think me! Give me this chance; I won't fail!"

"How will you succeed?"

"I don't know, but I will! I shall use my wits."

"It seems to be our best chance. You are more familiar with the General Offices than any of us. Go with Cunningham."

"David," said Vera earnestly, "send me too. Your first plan is only a forlorn hope any way. The second is our one chance; we can't risk failure!"

"You still distrust me, Miss Ferguson," said Miss Adams in a hurt voice. "Wait till tonight, and you shall see!"

"Vera," said MacRobert, "I can't send you too. My first plan is a forlorn hope. I admit that. Nevertheless I must carry it out. We can afford to leave no stone unturned."

"Is it an order?" Vera asked.

"It is an order. You must stay here."

"Very well; I know enough not to try bossing the Commander in Chief. I'll stay. Here," she said, suddenly turning her back, and bending down, "take this

with you, Alan." Straightening up, she handed Cunningham her telephone. "If it should be possible to get anything through, you may need this."

"Get me those calculations by six o'clock," said MacRobert. He turned, and was already assigning the others to their duties before Alan could reply.

"All right," Alan said. "You shall have them by six sharp. Miss Adams, wait for me outside on the front steps."

CHAPTER XVIII

Luck and Wits

IT took Cunningham but a moment to glance over the Chief's 540 horsepower *Peerless,* to assure himself that all the chemical generators were filled to capacity and everything was in perfect running order. The splendid mechanism answered to his touch like a thoroughbred. In five minutes he was at the front steps to pick up his passenger. She was standing on the sidewalk, conversing excitedly with Brande. Evidently they had not waited for the formality of an introduction.

"Miss Adams has given me the main facts of the situation," he called out. "Is there anything I can do to help? I came over to see if everybody is all right here."

"So far all's well," Cunningham answered, bringing the car to a halt. "You're just the man I wanted to see. Hop in with Miss Adams in the back."

Asking for no explanation of the request, Brande reached for the silver knob to open the rear door. His effort was answered by a sharp crackle of electricity. He sprang back, rubbing his wrist. The same shock stiffened Cunningham's arms at the levers like rods. They had been struck, but not seriously. Making a

second attempt to open the door, Brande succeeded. Almost throwing the girl in before him, he tumbled in, shouting a command which was drowned in the frightful peal directly overhead. Cunningham trod on the accelerator, and with a roar the great machine was off like an arrow, crackling and sparking at every joint.

"Close shave," Brande remarked coolly, leaning forward when the thunder ceased. "Did you hear it?"

"Rather! Quite a storm coming up, I imagine. Look at those ink sacks ahead, almost touching the roofs. Sit tight and we'll be there in thirty minutes." Turning the corner Cunningham shot the speed up to ninety miles an hour as they streaked along the level speedway leading over the third Hudson bridge to New Jersey.

"Blessed be the bridge builders," he called back to his companions, "also the straighteners of roads, for they make speed possible. From here on there is but a single turn all the way. Hold fast! I'm going to give her the limit."

For some seconds the only sound was the roar and screech of the chemical motors, working as they had never worked since their test at the shops. Then, as they shot the Palisades, Brande leaning over concluded his observations.

"I didn't mean the thunder, when I asked if you heard it. That I took for granted."

"Then what did you mean?"

"That ten thousand or so of brick which landed behind us just as we started. The bolt which struck your

laboratory knocked most of the cornice into the street. What do you want with me on this trip?"

"To take the levers if I'm hit. We must get some data from Jevic's laboratory to our own within three hours. So if anything happens to me it will be up to you to get what we're after back to MacRobert. Ask Miss Adams about it."

He sat back, and almost immediately was at Cunningham's ear again.

"She's fainted."

"Well, bring her to! She can't stand thunder. You have your pocket case with you?"

"Yes. I'll fix her."

Whatever he administered must have been drastic, for shortly there was a feminine shriek followed by voluble and indignant expostulation.

"Look out!" cried Cunningham, "we're coming to the turn. From there on it's a straightaway."

"What's happened to the storm?" Brande asked, once they were safely past the dangerous turn. "Ten minutes without a whisper."

"Silent discharge. Look at the tops of the trees."

Truly it was a marvellous and beautiful sight. The heavy soot-black cloud masses floated not more than two hundred feet above the ground, swirling in slow eddies like heavy smoke over the reeking earth. And from every tree top a broad fan of brilliant blue flame streamed harmlessly up with a hissing rush to the low clouds above. Every metal projection on the car had its own display on a smaller scale as they flashed through the deepening gloom like a flaming arrow.

Momentarily the clouds dropped lower through the thickening darkness, but with each foot less between the trees and that heaving pall above them, the brushes of electric blue flamed up in redoubled brilliance, throwing every detail of the landscape into livid relief. Under the strain of less urgent circumstances the travelers would have enjoyed following the lurid splendors of the constantly changing scene, but anxiety for the outcome of their mission precluded all sense of enjoyment. Luckily the unearthly light, terrifying to any who did not understand that so long as it persisted there was nothing to dread from the storm, had cleared the highway of practically all traffic. But for a scant half dozen high-powered cars like their own, probably those of scientific workers on urgent missions, they had the road to themselves.

They were within five minutes of their destination before Brande leaned forward again.

"Miss Adams has explained what she has to do. How she is going to get into Jevic's private laboratory in the first place beats me. She is trusting to her wits she says. Personally I should prefer high explosive to get the door open, and a club for Jervic afterwards. But as she is cool and hopeful we can follow her so long as she had a plan that seems likely to succeed, waiting our chance to take the initiative if she fails. The two of us ought to be a match for Jevic. You're husky enough, and I can use my head."

"Yes, but how are we to get into his laboratory? That's the question! Well, there's no sense in crossing our bridges until we come to them, and we shall come

to the first in about thirty seconds. There's the wireless tower of Consolidated's General Offices. If anything happens to me, Brande, you will have to rush the calculations to MacRobert. Remember, whatever happens, you must get them to him by six o'clock."

"Provided we get them," he muttered, "I'm good for their safe and quick delivery. Better leave the machine here. If you draw up to the entrance some employee may get suspicious."

"That's a good suggestion. Well, we're here. Pile out!"

Miss Adams hastily pulled herself together.

"Is my hat on straight?" she asked anxiously.

The eternal question, at that moment when perhaps the fate of the universe hung on their venture, seemed so grotesquely feminine that Brande and Cunningham both burst into laughter.

"Stop it! Oh, please, *please* don't be silly," she cried, stamping her foot. "Tell me, do I look all right?"

"Fresh from the bandbox," Brande assured her, with mock gravity.

"Very well. Now get that desperate, Day of Judgment expression off your faces and come quietly with me."

Letting her lead the way, the two men followed her as unconcernedly as their rather confused emotions would permit.

"If you have to take the calculations back, whatever you do, drive carefully. Take five minutes longer if you have to, but get there!" said Cunningham to Brande in a low voice.

"Never fear. I could drive that dream of a car over the Canadian Rockies in my sleep."

"Will you two stop whispering?" Miss Adams demanded, turning on them with exasperation. "If you have anything to say, speak out in a natural voice. You look like a pair of anarchists conspiring to blow up the building!"

"I am sure," gravely returned Brande, "neither Cunningham nor myself would be guilty of such an act of vandalism. Just picture all these magnificent rose marble pillars coming down in fifty ton chunks, and that beautiful bronze door at the end there sailing heavenward like a Chinese kite! It wouldn't do at all, Miss Adams."

"Then act like reasonable beings. Ah! there's piece of luck number one—old Charley."

"Who's he?" asked Brande. "The vice-president of this gang of thieves?"

The girl flashed him a dangerous glance. "The afternoon head watchman," she said coldly. "Perhaps he hasn't learned yet that I'm dismissed." She hailed him.

"Oh, Charley: Is Mr. Utterson in his laboratory?"

"No, Miss Adams. He went up to the City with Mr. DeLong and Mr. Grant on a special mission for Mr. Jevic at two o'clock."

Miss Adams looked her most efficient and business-like. "Then there is nobody working in the ray chambers?"

"Why, yes, Miss Adams. Doctor Preston and that other new man—what's his name?"

"Burnside?"

"Yes, Professor Burnside, are still at work in the eleventh. And I believe old Doctor Werner is still busy in the eighth."

"Thank you, Charley. How's your son? Keeping better, I hope?"

"Indeed he is, Miss Adams. He asked me to thank you for those electrical books you sent him."

"That's nothing, Charley. I'm glad he's doing so well. Terrible day, isn't it?"

"Like a nightmare, miss." Charley touched his cap and went about his business.

"Come on," Miss Adams commanded. "Preston and Burnside are no use to us. I'll try my second piece of luck. Doctor Werner is old, home-loving, gentle and unsuspicious. I knew all the time he wouldn't leave the plant, but wished to find out where he is. I hate to pull the wool over his eyes, but——"

Leaving the sentence unfinished, she hurried down a corridor to the left, no less splendid than the main hall of columns ending in Jevic's door. On either hand, at intervals of fifty yards, spacious green marble hallways glowed softly in a mild radiance, shed from huge suspended globes of cold light.

"Whatever Jevic's sins," Cunningham remarked, pointing to the globes, "he deserves the world's gratitude for those. Light without heat and practically everlasting—it surely was an invention to make any man proud. Just contrast the peace and quiet light in here with the seething, half-mad darkness outside, and give the devil his due."

"I am doing so," Miss Adams retorted over her shoulder. "This way, please," she commanded, turning down one of the hallways.

"How giving him his due?" Brande asked, a trifle suspiciously.

"Last night he told me to make use of whatever chances might come my way, and that is exactly what I am doing. We need no combination to enter this room," she said, lowering her voice as she swung open a plain steel door at the end of the hallway. "Let me do the talking. Werner will suspect nothing."

They followed her into the eighth ray chamber, perhaps the most famous of the Consolidated practical laboratories. From that severely scientific room, discovery after discovery of the highest value had issued in rapid succession since Werner, fifteen years ago, had sold himself, body and soul to Consolidated in order that he might have uninterrupted leisure for his researches. To him it mattered nothing that the fruits of his genius became the monopoly of an unscrupulous Corporation; he knew nothing and cared less about the extortionate profits exacted by Consolidated for the new necessities created by his inventions and discoveries. More than one industry had been revolutionized or obliterated by the practical application of his researches. But to every result of his genius save the opportunity which it won him to pursue science in whatever direction he chose, he remained coldly oblivious. Not originally a selfish man by nature, he had merely followed the line of least resistance, careless whether others misused his talents to oppress the world

for their own gain, seeing in the exploration of nature the one desirable end and the single true happiness. Such was Werner.

They found him absorbed in his work, patiently reducing a large spectrogram. It was apparent that their intrusion had passed unnoticed. For some seconds June Adams closely studied him and his occupation in silence, planning her attack.

"What is he doing?" she whispered to Alan.

"Measuring up the lines on a light record from some star or nebula, I should judge," he answered.

"Is it likely to have anything to do with all these new stars? Or possibly with the annihilation of the nebulae?"

"Most probably. He is examining the nebulium line at present. I would guess he is trying to account for the wiping out of some particular nebula."

"It is a chance," she murmured. "If he gives me no other opening, I'll risk it."

She walked boldly up to the work-table and touched Werner on the arm. He glanced round with a slight start.

"Oh, it's you, Miss Adams. Very curious effect here. The nebulium line is quadrupled on the first of these, and only doubled on the next. The third," he reached for one of the long slips, "taken just before the nebula was annihilated, shows a complete absence of the line. Now, Miss Adams, how can you account for all these freaks of nature?"

"I can't," she answered, laughing; "but no doubt Mr. Jevic can. In fact I am to help you carry your

charts and things to him at once. He wishes a report of progress before I leave."

She put up her hands and straightened her hat in the most natural manner possible, but yet so that even Werner, still dreaming of his spectrograms, could not fail to notice her action.

"I'm leaving early today, and Mr. Jevic asked me to see to this before I go."

"Not unwell, I trust, Miss Adams?" Old Werner asked kindly.

"Oh, no, but some friends from town, Doctor Brande here and Mr. Cunningham, arrived unexpectedly, and Mr. Jevic has given me the rest of the day off. I worked very late last night."

She introduced them, gathering up Werner's papers as she spoke.

"You need not bother about taking those," said Werner, indicating two massive folios of spectrograms which June was reaching for; "I had them out merely for comparisons."

"Oh, but I had better," she protested, hoisting the volumes into her arms; "Mr. Jevic told me to see that you brought everything. Orders are orders, you know."

"Let me help," said Brande, gallantly laying his hand on the heavier volume.

For answer, she trod swiftly and heavily on his foot. Brande desisted. Old Werner then offered his assistance.

"No, Doctor Werner, this is secretary's work—mine," she answered firmly. "Please take a good look

about to see that we have left nothing. I do not want to come back. Is that all? Good! Come on."

Her arms full of papers and volumes, Miss Adams preceded the somewhat dazed Werner from his laboratory. Cunningham and Brande followed in dumb admiration, a glimmer of her plan having at last penetrated their darkness.

It worked beautifully. The great bronze gate with its flamboyant dragon looked more massive and impassable than ever; but at June's simple formula it slid back for them as if by magic. Indeed, magic it certainly was, and of the blacker kind.

"My arms are full, Doctor Werner," she said naïvely. "Would you mind working the combination for me?"

"Not at all," answered the unsuspecting Werner, pressing the button with a singularly complicated and irregular series of longs and shorts. "Delighted to be of any assistance to you."

CHAPTER XIX

Brande Distinguishes Himself

SAFELY past the seemingly impassable dragon they stood within the den of the beast himself. Werner reset the combination, and the door closed noiselessly behind them.

At the far end of the room Jevic sat at his work table, unconscious of their entrance, wholly absorbed in his work. His appearance was exactly the same as that which, less than two hours before, they had first seen in the telephotic image. Lost to the outer world, he took no notice of their approach, threading in complete oblivion of time and space the mazes of his calculations.

There was something ominous about the roughly clad figure of the aged but youthful-looking giant seated there before them, intent upon the massed array of his symbols which only he, and perhaps one other mathematician, could command to yield up to the progress of the human mind their innumerable secrets. The coarse red shirt, the cheap, faded dungarees and the ditch-digger's clumsy boots visible beneath the priceless work table of inlaid ebony with its few costly ornaments, but emphasized the innate brutality of the man despite his matchless intellect which intangibly

revealed itself in his slight, unconscious movements; even as the tawny browns and smoky reds of the tiger skin on which he sat accentuated the savage, the barbarian at heart, uncivilized, and a conqueror of his weaker fellows by sheer strength of intellect. The man was in some sense a survival, a late-stayer from an epoch which the world is forgetting. He had the indomitable will to power; and more, what the historical bullies had lacked, he had the means to power in his almost superhuman intelligence.

When at last he looked up from his symbols, it was with filmed eyes and an air of total abstraction. He was not acting; the man simply did not see them. Miss Adams motioned them aside, and they stood apart, out of the direct line of his unseeing gaze. At length, Jevic's eyes, resting on Werner alone, became clear with the light of everyday intelligence.

"Ah, my dear Werner, how are you? Take a seat, pray. You will find that teak armchair comfortable."

Brande and Cunningham followed Miss Adams noiselessly over the rich silken rugs, until they all stood safely a few feet behind Jevic's low settee. They scarcely breathed. It was plain that Jevic was still wielding the sceptre in the empire of his dreams. He had spoken to Werner mechanically, almost unconsciously. With an air of mild bewilderment, Werner took the indicated seat.

"You wished a report of progress on the spectrograms of last night's disturbances?" he ventured.

"I was just above to call Chung and send for you," Jevic answered. "There is something here," he indi-

cated the top sheet of his calculations, "which I do not quite understand. Your measurements on the nebulae may help me to check up the discrepancy. But how did you guess what was in my mind, Werner?"

Werner laughed. "Here is my chance to make a reputation as a telepathist," he said. "Only, the contrary evidence of your senses would be too strong. Miss Adams and her two friends are rather too substantial to pass as mere mind-stuff. It was she who brought me your message, and fetched along all the data you wished. I fear you have been overdoing it, Mr. Jevic. Better run up to town tonight, and take in an opera."

"Miss Adams?" Jevic asked incredulously. "Werner, you're dreaming! Much as I regretted the necessity I discharged Miss Adams this morning for breaking the rules of punctuality. I must have forgotten to mention the fact when I gave you the new combination. No wonder though, I've been having such a devil of a time with some of this stuff. Werner, old fellow, it's you who need a rest. Run up to town for once in your life and take in two operas!"

The inevitable happened. Miss Adams's arms, strained beyond endurance, began to tremble nervously. The larger folio of spectrograms slid a tenth of an inch over her left arm; she made a wild heave to restore the perfect balance, and before they knew what had happened the whole armful of papers and books was on the floor and Jevic in midair.

"What the hell's that?" he bellowed, collapsing on the tiger skin. Evidently his nerves were on edge. It

was the young woman's moment, and she seized it. She gave him no time to lose his temper.

"Mr. Jevic," she began speaking rapidly as she took up her position, facing him across his table, "your talk last night on the marvellous way you use chance in your researches gave me an inspiration. When I recalled your remarks this morning," she went on with subtle flattery, "I determined to try imitating you in a humble way. After leaving here this morning I bought a *Scientific Bulletin,* and of course devoured the news of all the wonderful things that began to happen last night at eleven o'clock—the precise moment, you remember, at which you showed me your new star or burning nebula. According to the *Bulletin* that was only the beginning. And you began it! Still more wonderful things have been happening ever since your first prediction was fulfilled. Your sunspots have come true. Even now," she went on hurriedly, giving Jevic no chance to edge in an objection, "even at this very moment a magnificent and strange sort of thunderless thunderstorm is raging. I never saw or imagined anything like it! You must come outside with me in a moment and see for yourself. I know you will be fascinated by the weird effects thrown by this new, unnatural light. They are unique!"

"But how——" Jevic began.

She was too quick for him. "I was just going to tell you. When I read what the *Bulletin* had to say about everything, how nobody could account for even the least mysterious of these events, I smiled and said proudly to myself, Mr. Jevic can! I remembered how

you predicted the new star—a thing no one but you has ever done; and I made up my mind on the spot to see you, and get you to explain everything, perhaps even tell me what is to happen next."

"But Doctor Brande and Mr. Cunningham——" Jevic expostulated, desperately cutting across her fervent hero-worship.

"Yes, of course their presence will seem strange. But I met Mr. Cunningham and Doctor Brande by accident in the City; and when I told them about your prediction last night, and what I believed in consequence, nothing would do but that they must both come with me to see for themselves. Mr. Cunningham says it is impossible for any human being to predict a new star. Won't you predict another, and show him how wrong he is? He has bet me a dozen pair of the best gloves that you can't."

There was a brief, uncomfortable silence during which Jevic distrustfully surveyed them, his common sense battling valiantly to overcome his suddenly inflated self-esteem. Brande's effort at an expression of burning scientific curiosity was hardly a success. Nevertheless, considering his badly mixed feelings at the moment, he did remarkably well. He afterwards confided to Cunningham that while he could not help envying Miss Adams as the most fluent and masterly liar he had ever seen or heard: he was filled with pity for the man who some day must be her husband.

Jevic's struggle with himself was short, severe and decisive. Conceit won the day.

"You shall win those gloves, Miss Adams," he said

goodnaturedly. "And now may I ask precisely how you applied my principles of chance?" he inquired with a visible ruffling.

To Werner's intense misery she explained briefly and clearly. Jevic laughed in great good humor.

"Well," he said, "since you have proved yourself so apt a scholar of my peculiar methods, it would be scarcely just of me to scold you. He playfully shook his enormous bejewelled forefinger at her. "But don't you do it again, or I may chance to be cross. There is no damage done this time; I was just going to call Doctor Werner myself."

"Then Doctor Brande and I may stay to see some of your experiments?" Cunningham asked.

"You are welcome to do so. Of course," he added with heavy irony, "I can show you nothing so marvellous as the things Ferguson does at the Independent Laboratories."

"We have nobody in our shop who can predict to second the appearance of a new star. That alone would justify a trip from China to see. I hope we have been lucky enough to catch your calculations at the right moment?"

It was absurd that such crude flattery should trap him. But it did. Without a superior in the most difficult enterprises of the pure intellect, this giant was as weak and humble as a child before praise. It flashed into Cunningham's mind that Jevic was what he was, as indeed Ferguson declared, because never in his life had he received a public word of praise for the

transcendently great achievements of his scientific genius.

"Would you care first to see what we can do with polonium, Mr. Cunningham? Or perhaps you would prefer a demonstration of the new Zeta rays on which DeLong, Utterson and Grant have been working? Their researches ended in complete success at five o'clock this morning; and this afternoon they have run up to town to see about the patents. The last link in the chain was in my own work," he pointed to the uppermost sheet on his table, "although it escaped me, I confess, for almost eight months."

"That certainly is what I should be most interested in," replied Cunningham truthfully.

"Very well, but first, I will go and tell Chung to get us some refreshments."

Excusing himself, he left his visitors standing by his work-table, piled with huge sheets of his calculations, and walked towards the door. How long would he be gone? Would they have time to select the main sheet—or perhaps take all, just as they lay—and escape to the machine before he returned or met them in the corridor. The girl's wits came to the rescue.

"Oh, Mr. Jevic! Doctor Brande has a case which he must visit in a few minutes, so perhaps you had better not order refreshments for more than four."

"I shall be sorry to miss you at our little entertainment, Doctor Brande," he said, walking back to the group. "But if you feel that you must go before my return, I shall leave the door unlocked. All you will

have to do is to give it a gentle shove with your hand. Can I offer you something now?"

"No, thank you, Mr. Jevic. I shall wait a few minutes and look at your curios, if I may, and then I must hurry off. Thank you just the same."

"Then goodbye, Doctor, if we should not see one another again. Sure you won't take something? Well, I expect we shall not see one another again, as I may be fifteen or twenty minutes ordering my little entertainment."

They shook hands. The Doctor flinched.

"Goodbye, Mr. Jevic," he said.

Jevic turned once more, leaving them in full possession of his work-table. This time Miss Adams permitted him to leave the laboratory.

"I despise myself for this," she said, when the door had closed behind Werner and her late employer. "Mr. Jevic was my good friend, and he is yet. I can't go on with it."

"Then I must," said Brande with quiet bitterness. "Cunningham can't do it. His absence would give us away. Jevic would follow immediately—or send one of his trained, scientific devils after him, as he did after that poor fellow yesterday. Don't think, Miss Adams," he added with gentle dignity, "that this work is any less distasteful to me than it would be to yourself. I am not in the habit of stealing."

He regarded her with pity, but without scorn.

"I must now ask you, Miss Adams," he said, "to betray the man who has been your friend and bene-

factor. Please tell me exactly what the sheet for which we have come looks like."

"I can't," she whispered. "I am not a traitress."

"Then I must take the whole pile," Brande replied, preparing to gather up all.

"Wait!" she sobbed. "I will tell you. Better that than a wholesale robbing. One sheet, but not all."

"Then what does it look like?"

"Let my hands do it," she said wearily, rising and beginning to search through the pile. "Oh, I hate myself! A thief. . . ."

About half way down the pile she found what she was looking for.

"This is what Mr. MacRobert must have," she whispered. "The colored square of diagrams in the right-hand corner identifies it as the one he saw."

She drew out one of the largest sheets, a huge chart of equations and symbols. Brande stretched out his hand to take it, and paused, hesitating even then whether he could bring himself to the theft.

"Take it," she insisted. "The fate of the world is on this sheet."

Still Brande hesitated. Then he sighed, and drew himself up erect. Taking the huge sheet without a word from her hands, he rolled it tightly up, and thrust it inside his coat, which he buttoned.

"I shall deliver this to MacRobert within thirty-five minutes. That will be considerably better than he asked. You two must wait here for an hour or so, otherwise Jevic's suspicions will be aroused. In fact,

I advise you to stay as long as possible. For once he misses this sheet, there is no telling what he may do. We know his power. He would not hesitate to destroy the Independent Laboratories to prevent Ferguson's profiting by the discoveries on this sheet. I shall order a fast car from the first reliable garage I pass to come here and wait to pick you up. You can count on the car being where ours now is within an hour. So if you are forced to run for it, you may have a reasonable chance of escape. Goodbye."

"Goodbye, and good luck!" echoed Cunningham. "Get there, whatever you do. Remember what Jevic did to that helpless flyer yesterday; think of his deliberate attempts to starve Europe today! If ever the end justified the means, it does now. Go quickly. The safety of the whole human race depends on you."

Silently Brande turned and went out.

CHAPTER XX

Refreshments for Three

I AM sorry Doctor Brande had to hurry off," said Jevic, arranging the things on his tea tray. "He is a very agreeable young man. I like him immensely. Ah, thank you, Chung, I had almost forgotten the loquats. That is all, Chung; you may leave us now."

Chung retired, noiselessly, as all Chinamen do.

"Won't Doctor Werner join us?" asked Miss Adams.

"No; he is carrying out a little idea of mine in the ray chambers. There may be something interesting to show you after tea."

"I hope he will be successful," she said politely.

"So do I, in a way," answered Jevic. "In fact he must succeed, and that before midnight. Otherwise there may be trouble."

"I should think, if that's the case, you would hope with all your heart for his success," Miss Adams persisted.

"To tell you the truth," he said, "my hopes and fears are a puzzle to myself at this moment. If Werner succeeds, one thing will happen; if he fails, another. Either of these things might be called highly desirable. I should like to have both of them happen; but

physically that is sheerly impossible. So I have to make up my mind which I really prefer in my heart of hearts. The one—if Werner succeeds—is what I have worked for all my life. The other, if he fails, is a new prize which I saw at about three o'clock this morning for the first time. It is a greater—infinitely greater—success than that for which I have worked; yet, strange to say, I am not quite sure that I wish it. My future," he concluded with a rather doubtful laugh, "is like that cake: full of good things all hopelessly mixed up together, so that I cannot have a plum without taking some clove and cinnamon along with it. Now, supposing I am fond neither of cloves nor cinnamon, I shan't much enjoy my cake. There is only one way out; I shall have to ask Chung to steal me an uncontaminated plum from the chef."

"Mr. Jevic," remarked Cunningham, helping himself to some of the disputed cake, "you must be a psychologist."

"God forbid," he said simply, turning his back upon him abruptly.

"What is it that you fear?" Miss Adams asked gently, a strange curiosity creeping into her voice. "A thunder storm?"

"Not exactly. The electrical storm is fast passing off in silent discharges. It will probably be a beautiful night. That much I can promise you with assurance."

"Do you control the weather, then, Mr. Jevic?" she went on.

"To a certain extent, yes. But I seldom make a

practice of interfering with what Nature, on the whole, manages so well."

His manner left his audience in doubt whether he was serious or merely joking in his own way.

"Then we shall probably have perfect ray and wave transmission again in a few hours?"

"Very shortly. In an hour, I should say. By that time it will be possible to speak as usual from here to London. Certainly we shall be able to talk with your laboratories before then. Will you try one of these cakes? Do. They are a special favorite of mine —I used to devour them as a boy. Chinese spice cakes —some of Chung's lesser masterpieces."

His casual reference to the Independent Laboratories gave Cunningham a chill. Was he playing with them? How much, if anything, did he suspect? Nothing in his manner showed the slightest hostility; he seemed intent merely on discharging his duties as host to two chance visitors. Accepting his weather prophecy at its face value, Cunningham tried another lead.

"Suppose conditions do become normal again, as you promise. Why should you, in that case, worry about the outcome of Werner's experiments? Surely if the storm passes harmlessly we have no cause for apprehension? The storm is undoubtedly due to the terrific outburst of sunspots. If the storm goes, it will indicate that somehow or another the spots have suddenly subsided. Now if the sun again becomes normal, probably everything else will too; for opinion seems

to be unanimous that all of the present outbursts are due to one and the same unknown cause. So honestly, Mr. Jevic, I fail to see why you should worry. Incidentally, I note your red shirt—but let that pass."

"I wish I knew what answer to give you, Mr. Cunningham. For the first time in my scientific career I am completely at a loss. Yet this much I know for certain. There is a rhythm. A regular order if you like, in all the disastrous occurrences of the past sixteen or seventeen hours. It is the minute study of this rhythm which disturbs me."

"Why?" asked Miss Adams, leaning forward, her face suddenly white.

"Because it points unerringly to some terrible climax at approximately eleven o'clock tonight. What will be its nature, I can only guess. And guesses, you know, make shoddy science. Therefore I shall say no more about what I half anticipated. Try some of your favorite loquats, Miss Adams. Let me give you this one. They are best when dead ripe."

"When," interrupted Cunningham, "did you first suspect something unusual, Mr. Jevic?"

"Shortly after two o'clock yesterday afternoon."

"What a curious coincidence! That was the time you set for firing the first shot in your war against the Independent Laboratories."

"It was," he admitted. "As you say, a remarkable coincidence. I wonder," he said slowly, "how much of it was mere accident? It would be worth my fortune to me if I knew exactly what the men in your ray chambers were doing at that time. My suspicion is

that Ferguson chose his own time for opening hostilities, and caught me unprepared. If so, he may regret it more than I. For that false shot seems to have started the war on a scale which neither of us can control."

"But, Mr. Jevic!" Miss Adams exclaimed, her eyes widening in terror, "you were so confident last night at supper time!"

"I was," he admitted. "And perhaps, after all I had reason to be. My doubts at this moment may be unfounded. That, precisely, is why I am troubled. I am in the strange case of a man who knows that he has succeeded yet feels that he has failed. There's psychology for you, Cunningham!"

"Oh, do tell me plainly what you think!" the frightened girl cried passionately. "I can't stand it!"

"My dear Miss Adams, I am trying my best to tell you. But don't you fret. You won't be hurt; I'll promise that. Come, eat your loquats, and brighten up. While we live, we live."

She smiled at him pitifully, searching his face for a ray of comfort. Evidently she did not find it, for she turned away with a despairing sigh.

Jevic stood silent, frowning reflectively, and Cunningham could not restrain an impulse to glance at the clock. It was already a quarter to six. Jevic looked up suddenly and caught him in the act.

"I shouldn't worry about him, Mr. Cunningham," he said, with sneering insolence. "He probably kept his appointment in time—he left here an hour and a half ago."

"What appointment?" Cunningham managed to stammer.

"Why, with his patient, of course!"

"Oh! Of course. How stupid of me. But we have been discussing such vitally important things that I lost my bearings for a moment."

"Ah, well, no matter!"

He began pacing restlessly back and forth before his work-table. Again the wild look which Cunningham had noted on his face yesterday, returned, and again he wished with all his heart the door were open.

It was clear now that Jevic suspected them of something, and was amusing himself with their fear and discomfort. Then a horrible dread made Cunningham's brain swim. Had Jevic known all along the object of their mission? If so, where was Brande at this moment? Jevic would never have let him escape. Perhaps even now Brande was locked helpless in the building, and MacRobert beaten, his forlorn hope a disastrous failure.

For several seconds nobody spoke, and poor Miss Adams's embarrassment became tangible. At last Jevic, ceasing to frown, suddenly switched back to smiles and like a good host, rescued the situation, but in a way that gave Cunningham another ghastly chill.

"I see you are not wearing your ring, Miss Adams," he remarked significantly. "Was the hoop too large?"

She looked for an instant like a bird confronting the snake that means to devour it. Then her agile wits triumphed.

"Yes," she said, desperately. "I had to take it off for fear of losing it."

Jevic glanced meaningly at her purse.

"Let me give it to one of our instrument makers. He will fix it for you in a few minutes."

For a moment the wretched girl appeared about to faint. However, her quickness once again came to her rescue, and she rallied bravely.

"It is very kind of you to offer, Mr. Jevic, but I left it at the jeweller's on my way here. Thank you, just the same."

"I trust he is an honest jeweller, Miss Adams," said Jevic in a voice deadly with meaning, as he turned on his heel, and with his back toward them, began turning over the pile of calculations, as if searching for a sheet that he wanted. "I must have mislaid it," he muttered to himself, again searching the pile.

They sat frozen in suspense. What if he should be looking for the sheet which they had stolen? Cunningham fancied that he could hear Miss Adams's heart pounding at her ribs.

"Ah!" he exclaimed, suddenly straightening up, "here it is." Cunningham's heart galloped. The tension had become unbearable; but, glancing at the clock, he saw the hands pointing exactly to seven. They were saved! The world was saved! Brande must have delivered the main sheet to MacRobert an hour ago. They had won!

"Now, Cunningham," said Jevic, his back still toward them, "if you will allow me to make a cer-

tain slight transformation here, I shall convince even you that I know what I have been talking about."

He appeared to scribble something on the part of the sheet which he held in his hand, raised a few inches from the table.

"Take a good look at the left-hand column of equations, also at the diagrams. From them I propose, by a very simple operation, to produce a startling effect."

He turned abruptly round, holding up the immense sheet of calculations for them to inspect.

Cunningham recognized it at a glance. It was the very one for which they had come, and which he supposed was by now in MacRobert's hands at the Independent Laboratories!

CHAPTER XXI

Playing with Ruin

"THEN you knew all along why we had come?" Miss Adams asked weakly. Her faint had been real but brief. Jevic ignored her question.

"You will be all right now, Miss Adams," he said, casually wiping the last drops of water from her temples with his handkerchief. It was he who had brought the girl to. Cunningham was too near collapse himself to be of any assistance. "Lie still on my tiger skin until you feel warm again," he went on kindly, "when I want to ask you a question. In the meanwhile Mr. Cunningham and I will entertain one another, and perhaps old Doctor Werner may be able presently to enliven our discussion."

"May we go?" Cunningham asked shortly. "I can take care of Miss Adams. It is getting late. I must return to our own laboratories to help the men there."

"Will they be expecting you, Mr. Cunningham?" he asked interestedly.

"They will. They have been needing me for the past two hours or more."

"Really?" he said sarcastically. "In which capacity? Lightning calculator, or wild goose chaser?"

Cunningham ignored the taunt. "May we go?" he persisted.

"Why hurry? If your friends are anxious, telephone. There is an instrument there," he pointed to the bronze image of Confucius, "in that gentleman's pedestal. All you have to do is to speak directly to his well-shaped feet. His eyes, I may remark," he went on with an evil smile, "are in the region of his stomach. He is stuffed with pure radianite as one stuffs a turkey with chestnuts. The rest of him is unsophisticated bronze of the first quality, threaded through and through with the rarest filigree of costlier metals. Just touch the hem of his gabardine —so, and you set him in speaking order. What is Ferguson's combination?"

"Look here!" Cunningham shouted, his anger getting beyond control. "You know what may happen within three hours, and yet you waste time amusing yourself by jeering at us instead of doing whatever you can to avert the disaster your presumptuous meddling with nature has caused. I'm going back to our people to see what can be done."

"Oh, no, you're not, Mr. Cunningham," he replied calmly. "At least not until I permit you."

"Then we are your prisoners, are we? Rather crude, Mr. Jevic. This is no time for melodrama!"

"Say, rather my guests, Mr. Cunningham," answered Jevic with an evil smile. "Presently I mean to offer you some high class entertainment by way of amusement. I may even be able to bring a terrific thunderstorm out of that cloudless sky—who knows!"

Miss Adams groaned as she flung herself back on the couch. "Oh, not thunder!" she whispered, her hands over her eyes.

"You brute!" hissed Cunningham, stepping in front of Jevic with clenched fists. "Don't torture that poor girl. Wreak your childish vengeance on me!"

"Presently, Mr. Cunningham, presently. All things in their proper order. I mean only to show you some of those experiments you were so eager to see when you first came. And old Doctor Werner, I think, may very shortly be able to report the outcome of a crucial investigation which he is conducting now at my request. The outcome of Werner's ingenuity will interest you intensely, I know. It will interest even me, and I have been speculating on its possibilities since three this morning."

"Man, you're simply insane. But, sane or insane, you let Miss Adams alone. She is not to blame for coming here. Address your remarks to me—or big as you are, I'll make you sorry!"

"Miss Adams, I fear," Jevic returned with a coldly malignant smile, "has been fighting against my victory."

"So you really thought," he went on, after a pause, in which he had thoughtfully studied Cunningham's face, "that I was just a great overgrown baby to be swindled out of his poor toys by three thieving children?

"Why, you poor miserable half-wit. Your scheme was obvious from the moment you set foot in this building. I knew well that you had not dropped in

to wish me good afternoon. Nevertheless, I was interested for a moment in following your movements and seeing what you would do. My first intimation of your scheme was Miss Adams's announcement that Brande must hurry off to see that poor patient of his. From then on the situation was in my hands. I let it bud and blossom as naturally as a July rose and permitted Brande to sneak away with a sheet of useless rubbish for your friend MacRobert. But do not imagine," he said with sudden fierceness, "that Brande or anyone else would have got farther than that door with *this!*" He brought his fist down on the real main sheet of his calculations. "As it happened," he went on with a triumphant sneer, "you played my own game better than I myself could have played it. You have assured me the greater victory!"

"So we have played into your hands," said Cunningham, the futility of their attempt taking all the spirit out of him. "Well, we did our best. Let it go at that. After tonight nobody, perhaps, will ever praise or blame us. I am ready for the end. Are you?"

For a moment a look of doubt hovered over Jevic's face; but it was a mere flicker: it passed, and instantly he was more arrogant than ever in his magnificent megalomania.

"Ready for victory? Why of course I am! Why else would I be wearing this shirt?"

"Perhaps because you are mad with pride. Not even you, I think, could look forward with joy to the coming midnight if you saw as clearly as our people what is rushing toward us."

"I see perfectly, Cunningham. In fact, I left Miss Adams alone with my work on purpose. She knew of the two sheets. Didn't you, Miss Adams?"

"Yes," she admitted. "You have often said how easily anyone who knew no mathematics might mistake one for the other. The only distinguishing marks were the slight differences in the shades of the diagram squares."

Cunningham's heart stood stiill. The room seemed to whirl about him. This girl had duped them, after all. It was incredible.

"So you knew exactly, Miss Adams, what you were doing when you gave Brande the wrong sheet?" he managed to croak hoarsely, at last.

She hesitated, looked at Jevic, seemed to gain reassurance.

Finally, "I did!" she snapped. "Did you really think you could beat Mr. Jevic, all you poor simple creatures at the Independent?" and she gave a short scornful laugh.

At Cunningham's collapse, she looked at him disdainfully, and turned to Jevic: "You have won, Master," she said, hero-worship shining out of her eyes.

"Yes, I have won," he answered in triumph, drawing himself to his full height, "but as yet, I do not know the magnitude of my victory. Whether only this wretched world or the whole infinite universe is to eat my red shirt and die of it, depends upon Werner's answer to my question. He cannot now be long delayed. But I suspect, no! I feel certain, that mine is

indeed the greater victory! I am the destroyer of the Universe, and not for a million worlds would I exchange the one second of its triumph!"

He had leapt to his feet, and towered over them both, shouting. Slowly, her face now white with fear, the girl rose up; and in one ghastly flash of certainty Cunningham saw her revealed for what she was, a diabolically clever scheming woman. Her voice was hoarse with unreasoning fear.

"You have betrayed me!" she all but screamed.

"How?" shouted Jevic.

"You lied to me this morning. You told me you had won."

"Have I not? The universe is mine to annihilate!"

"Oh, you traitor! After all that I have done for you; to send me over there on a lie."

"I did not lie to you," he thundered, pounding the table with his clenched fist. "I told you the whole truth as I saw it. I sent you over to the Independent to leave that ring in their ray chamber so that I should not be balked of my victory. Whatever steps they planned to rob me of my conquest, I planned to duplicate here and nullify, or use to my own advantage. For I learned this morning at three o'clock that my supposed solution of those equations"—he brought his fist down on the main sheet, "is erroneous. Those equations cannot be solved! They deny me their secrets, misleading me with falsehoods, in order that I may be the conqueror, not of this wretched earth, but of the universe! There is but one chance in billions of billions that my first solution may, after all, contain the true answer to these riddles of the universe;

that human intellect may succeed in turning back the tide of ruin before it overwhelms us. And I thought that the Independent might recognize that chance and seize it. It is too late now, they cannot succeed. Had they started in time, and stumbled on the secret truth in all those billions of errors, they would simultaneously have defeated me and snatched the lesser victory—the mastery of this world—from my grasp. For whoever can stop that wave of destruction shall also master the secrets of releasing atomic energy and controlling it.

"Did I lie to you? No! I told you all that I needed to assure my victory was a knowledge of what apparatus, what physical steps, they were planning to defeat me. For they had sworn to publish the secret broadcast to the world! But now it is too late; I have won the greater victory!

"Girl! Will you come with me to the end of the world?"

She shrank from him, white and rigid with terror.

"I can't," she choked; "I can't. To give up this life? I am young; I have not lived. Tell me, is there no hope? Cannot you do something to stop the ruin before it overwhelms us? Oh, you are so strong, so great! Surely there is some way? Tell me there is. I have always believed in you alone. You are the one supreme king and leader of men—there is no human being whose strength of intellect can wrestle with yours! You are unbeatable."

Even on the sheer brink of eternity his conceit looked back at him. He smiled, as one smiles at an old friend.

"We shall see. If there is a chance, Werner's answer will reveal it. Ah, here he comes at last."

Jevic left them, striding rapidly down the vast room to meet Werner. They met about twenty feet from the dragon gate, which Werner had prudently, alas, closed behind him. There was no chance to make a bolt for the open.

For perhaps ten seconds the two men consulted in an undertone. Cunningham caught nothing of their words. Then Werner turned, Jevic with him, and both left the room, again closing the great gate.

Cunningham and the girl who had betrayed him waited in a silent agony of suspense for five minutes. Jevic returned alone. They met him by the gate, Cunningham calm, since escape was impossible, Miss Adams petrified between hope and dread.

"What did he say?" she stammered.

Jevic's face was Mongolian, inscrutable. He looked at her intently, not without kindness dawning gradually in his fixed black eyes.

"If I tell you that Werner has succeeded in stopping the wave," he said, "Mr. Cunningham will be in misery because the world is mine and enslaved. If I tell you that Werner has failed, that the one chance in billions still eludes us or is sheerly undiscoverable, why, then you will have hysterics. And in either case our evening will be spoiled. Therefore I shall say nothing, but let events speak for themselves."

June was about to collapse. Cunningham took her arm, and led her back to a chair by the table. Jevic resumed his tiger skin with an air of triumph.

"Mr. Cunningham," he began pompously, "I intend that you shall stay with me tonight. You know too much about what I am doing to be safely at large. When the victory is in my hand so that the whole world can see it, then you may take the good news back to the Independent. But not before. In the meantime you will be interested in a little exhibition of my power, and it will help to pass the time. Let me first show you something quite commonplace."

He began rapidly manipulating symbols on a piece of scratch paper. Cunningham's nerves, do what he could to retain self-control, began to go. An unnatural fear gripped his throat and seemed to finger its way to his lips. He swore to himself that he would make no sound. All too well he knew what Vera meant when she described her feeling in the warning flash as of "something arbitrary" handling her. With the involuntary courage of fear he made a sweep to knock the jewelled pencil from Jevic's fingers. Divining his intention Jevic shot out his left arm, hurling him back, half stunned to his seat.

"Look up," he said in a smooth voice, "look up. Miss Adams, through the Northern windows, as you looked last night. Serene evening, is it not?"

"Yes," she whispered, rigid with a new fear.

"Then look out!"

He leapt shouting to his feet, and with his left fist struck the table a resounding blow. The bronze image of Confucius fell over with a dull clatter, and lay still on its back.

"Here comes the thunder!" he shouted.

The girl shrieked. One shrill agony of terror pierced the swiftly descending night. No thunder followed, only an intense, bristling silence for perhaps three seconds. Then a dry rustle, like the rasp of a rattlesnake as it uncoils on parched sand, whispered and eddied about Jevic's fist, still clenched where it had struck the table.

Stiffening as if mortally stung, he glanced down in horror. There was nothing on his hand. Their eyes followed his rigid stare to the overturned image of Confucius. One small bronze hand of the figure dropped suddenly, striking the table with a faint, mellow ring. The other hand fell, with a duller sound. The head, parting from the body, rolled backward an inch, and lay still. Their eyes followed the incredibly rapid piecemeal disintegration of the image in sickening disgust; the thing revolted nature, it was not of their world.

For perhaps ten seconds the fragments lay whole and recognizable upon the table. Then, within three seconds, like lumps of salt in a pool of water, they crumbled first to shapeless dust, then to nothing.

With an oath Jevic swept his hand over the place where the fragments had lain. Not a trace of the bronze, not a vestige of the image remained, not one stain of dust of all that thing which less than thirty seconds before had been tangible, solid and heavy. It had vanished.

Yellow and trembling with fright Jevic collapsed on the tiger skin.

"Who did that?" he croaked; "who did that?"

CHAPTER XXII

A Surrender

A MUFFLED thundering from the bronze door brought them to their feet.

"Somebody is hammering to get in," cried Miss Adams. "Oh, let them in, Mr. Jevic; let them in!"

He reeled toward the door. Half way down the long room he staggered, shook himself together, and proceeded without a vestige of emotion. In that brief exercise of his indomitable will he had recovered the mastery. With deliberate pressure he released the interior combination, and the bronze gate rolled back.

For a moment he stood silent, showing neither surprise nor pleasure at the white-faced group of people from the Independent Laboratories.

"You have brought back that sheet of my calculations which Doctor Brande stole for you, MacRobert?" he asked at length.

"Yes!" MacRobert thrust the rolled sheet into Jevic's hand, and strode past him into the room.

"Come on," he cried to Ferguson and the others hesitating on the threshold. "If Jevic won't listen to reason we must use force. Come on, you men! Brande, look after Vera while she takes the messages."

Thompson and Wills sprang to MacRobert's side.

Ferguson lingered a few feet from the door, which Jevic, striding forward, closed, resetting the combination.

"We're ready," said Thompson.

"So I perceive," Jevic remarked with cool sarcasm. "But, gentlemen, this is my private laboratory. Did I invite any of you to enter?"

"No," answered MacRobert. "But we're here, and have no time to bandy words. I demand the main sheet of your calculations."

"Force will gain you nothing," said Jevic smoothly. "Try reason."

"Very well. You know what is happening?"

"Even better than you, I suspect."

"Vera!" MacRobert cried sharply, "is the wireless still coming through from London?"

"Yes, but it's getting weaker every second," she replied, bending over the portable long distance which she and Brande had hastily installed on Jevic's work table.

"Give us London's latest report," MacRobert ordered.

"The mechanics and metal workers have seized the League arsenals, loosing electrical destructors over all districts containing metal machinery of any kind. The madness is spreading to all classes of the people."

"Get Paris," he ordered. "You will be interested to know, Jevic, that the disease burst out anew like a whirlwind all over the globe two hours ago."

Vera readjusted the receiver and waited some seconds for the answer.

"Nothing comes through," she announced.

"Paris has gone under in anarchy, then," MacRobert replied. "The mob must have destroyed every ounce of metal machinery in the City. Get the Central Astronomical Bureau at Washington."

While Vera was adjusting her instrument, Jevic looked steadily up through the high north windows at the night sky.

"Is it my imagination," he asked with a triumphant smile, "or is that a faint greenish haze just perceptible in the northeastern heavens?"

Following his eyes they made out a dim greenish mistiness, like the shining of a faint candle through green horn, barely perceptible against the sapphire vastness of the unfathomable night. The haze streamed up through space faint and motionless, in a broad band like an auroral streamer, twice the breadth of the Milky Way, but in appearance less luminous than that galaxy, and somehow infinitely more remote.

"The coming of the End," said Jevic almost reverently. "Within a very short time, probably before midnight, that flame will have flashed past and enveloped the galaxy. From the remotest star of the Milky Way to our sun and this earth will be but the leap of a second, and we, with all our millions of stars, shall go out in a whiff of fire."

"Since you know," said MacRobert drily, "the report from the Bureau will be superfluous."

" 'Bulletin from the Central Astronomical Bureau,' " Vera cut in. " 'Latest reports confirm those of last three hours. The spiral nebulae are being annihilated en

masse. Estimates from forty-four stellar observatories, based on ray counts, show that within the past four hours half a million of the remoter spirals have been swept from existence.

" 'The hope which the Bureau held out in recent bulletins that the wave might not reach us for centuries is now definitely abandoned. The spectrographic records have been affected, showing the progress of the wave, by some hitherto unknown agency. We are face to face with a new form of energy, manifesting itself in complete destruction of matter. In some way, which we shall probably never discover, the matter, when destroyed, sends out instantaneously through all space a record of the destruction, and this record it is, like a flash of light, which is affecting our films and plates, making spectrograms possible. A similar theory was once held regarding the transmission of gravitation through space, namely, its instantaneous nature. Possibly the new energy is merely a known form on an inconceivably vast scale.

" 'The wave of destruction is spreading in this direction. We may expect it to strike our galaxy between 11:30 p.m. and midnight (New York time). No human agency can stop the wave or divert its course. Our annihilation will be instantaneous and therefore painless.' "

With a low cry Miss Adams sank to the floor in a dead faint. Picking her up, Jevic deposited her on his tiger skin.

"Well?" he said, glancing up insolently at MacRobert. "What of it?"

"The destruction of the universe doesn't concern you?"

"Not in the way you mean," he replied with unaffected indifference. "It is immaterial to me whether the flame takes us three hours hence or now. A few minutes ago, when an unforeseen accident shook me for a moment, I should have been as panic-stricken as you and all this pack of cowards with you. But now I am myself again. The accident—the annihilation of a treasured image—was but Nature's intimation that she has granted me the greater victory. Now I rejoice that I shall conquer, not this ball of dirt, but the universe with all its stars!"

"You are insane," MacRobert retorted impatiently. "Give me the main sheet of your calculations and let me see if anything can be done."

"Why don't you take it, if you want it? There it is, lying right on top of that pile."

"Do you think me a fool? I know this room. And I know you in your present frame of mind. I'll not see my people killed like rats in a trap to gratify your vanity. You could wipe us out now without moving from where you stand. Jevic, man! be reasonable, and give us a fighting chance!"

"To rob me of my victory? No! NO!"

"A poor sort of victory to put on your red shirt for, Mr. Jevic," Vera remarked quitting her wireless. "No single human being will ever hear one syllable of your conquering greatness. Not even you will realize for the briefest fraction of a second the grand and terrible magnitude of this thing that you

have done. And, Mr. Jevic! I beg your pardon for contradicting you. You called us a pack of cowards. The truth is this: except poor Miss Adams, who has fainted, as well she might, knowing nothing of science, not one of us has any fear. It is not the way of those who are born in science and brought up in truth to show the white feather."

The others held their breath. Would Vera's soft words and gentle rebuke succeed where MacRobert's bluster had failed? For an instant a flicker of expression seemed to light Jevic's stubborn, blank, Mongolian visage. His forehead knotted in thought, he began pacing back and forth in front of his table, deigning no reply.

He paced three full turns. Stopping abruptly, he ejaculated:

"MacRobert can do nothing."

"Very well," Vera answered. "Certainty is easier to bear than suspense. Will you come up on the roof with me?"

Jevic stared at her in amazement.

"What for, in the name of all that is unreasonable?" he demanded.

"To watch it coming. Do you suppose that I would miss seeing the heavens burst into a dawn by which the midday sun would look pitch-black in comparison? It will be the last dawn that we shall ever see, but I would not take a thousand years of sunsets and sunrises for the one second of its glory."

Very deliberately Jevic rolled up the main sheet of his work and thrust it inside his red shirt. Vera

watched him in silence. Then, putting her arm in his, she led him toward the great bronze door. Wills and Cunningham followed slowly a few yards behind. They reached the door, and Jevic's hand sought the combination. Vera never moved.

"You mean what you say, Miss Ferguson," he said, dropping his arm to his side. "And because you do, and because you have your brave life all before you, I will give you the one chance in billions of billions. For I also mean what I say. MacRobert can do nothing with those calculations."

"But you will let him try?"

"I will let him try." Turning, he walked back slowly to his work-table, explaining as he went. "Moreover, I will help him. For if it be possible to do what must be done in the two or three hours between us and universal destruction, it can be accomplished only by the utmost exertions of his intellect and mine. The stopping of that wave of ruin will be a task for our combined energies strained to the breaking. It is inconceivable that one man could perform the two computations necessary in the allotted time.

"Ferguson," he said, with a bitter smile, "your daughter has decided me. MacRobert and I will do our utmost to stop the wave before it sweeps this earth into everlasting oblivion, where no human being will remember friend or enemy."

The Chief said nothing.

"Whatever the outcome," Jevic continued, fiercely, "I shall be ruined. This is the end of everything for me. My life's work is destroyed!"

For an instant it seemed as though his despair had made him forget what he had promised. Then suddenly he drew himself up proudly, and glancing at the northern windows, he drew the roll of calculations from his shirt.

"That green mist is brightening," he remarked quietly; "the band is broadening perceptibly. It is rushing onward."

Again, as he spoke, for an instant that strange light flickered across his face. But it passed unnoticed by the others, and the suspicion flashed across Cunningham that Jevic was playing for time. Yet, if he were not acting in good faith, how could they command him? It seemed wiser to say nothing for fear of enraging him again.

"See if you can still get the Central Astronomical Bureau, Miss Ferguson," he requested. "I must have certain data before we can work profitably. Find out which of the nearer nebulae it appears probable that the wave will strike first."

Very hurried to the instrument and began calling the Bureau.

"Transmission is all but jammed," she announced. "If they can answer at all it will take five minutes with the necessary repetitions."

"Keep trying. We must know. While you are calling I will explain to MacRobert exactly what must be done."

He unrolled the enormous map of symbols on the table.

"Stand there," he directed, indicating the head of

the table, "and follow down the eighth and ninth columns of equations as I explain. I must go into detail, or you will not grasp my difficulties in the present situation. There will be no time later for explanations. Follow and say nothing, even if you disagree."

MacRobert took his position at the foot of the huge chart, his eyes glowing in fascination as they passed down the broad regiments of symbols. Jevic began speaking rapidly.

"Columns eight and nine contain all the equations necessary for a solution of the problem of releasing and controlling atomic energy. In column eight the equations are those for the destruction of the atom; in column nine for its creation or reconstruction.

"Carrying out the operations indicated in column eight, we destroy the atom, releasing all of its internal energy in one explosion. The effect of the physical processes symbolized in the equations of column eight is to convert the atom into energy; when those processes have gone through to completion, the atom no longer exists as matter, being dissipated into free energy, electrical, thermic, or other. By no means whatever is it possible, using only the physical processes of column eight, to control the rate at which the disruption of the atom into pure energy takes place. Once the chain of processes in column eight is started, it continues automatically to annihilate matter, producing energy. That is, if only the physical processes of this column are put into operation upon a material mass at any place, there will spread out from that

place a spherical wave or pulse of destruction annihilating all matter which it encounters. I may compare the effect to that of casting a stone into a calm lake; the ripples will spread and surround every rock and island in the lake, finally being reflected back from the shores. In the present case there will be no rebound of destruction. It will successively envelope all nebulae and other stellar systems. Thereafter it will surge forever through void space.

"Run down the equations in column nine, comparing as you go with their respective opposites in column eight. The sets of equations in the two columns go in pairs. Those in the ninth sum up the successive physical processes that must be put into operation in order to control the disintegrating pulse set in motion by the equations of column eight.

"In each column there are two hundred and forty sets of equations. Each set symbolizes a simple, definite operation which can be performed in any physical laboratory.

"With two exceptions I have solved the entire double array of four hundred and eighty sets of equations. The solutions of all those in column eight I obtained a year ago; the solutions of all but two in column nine I obtained this week. All but two of the destructive processes in column eight are therefore within my control. Until these two can be controlled, the entire tempest of ruin represented by column eight will rage unchecked through the universe.

"Shortly before 3 a.m. last Monday morning I put all of column eight, and all but the two unsolved sets

of column nine into physical execution in our laboratories, confident that before nightfall I should have solved the complete system in column nine, and therefore have all the physical manifestations under my control.

"Column nine had baffled me for eighteen months. On Sunday, a week ago, I found the solutions of all but the outstanding two within ten hours. Success made me over-confident. Disregarding what I considered was but a passing incapacity to solve the two remaining sets, and confident that I should succeed in a few minutes after a short sleep, I decided to put the rest into immediate practice. My life's dream lay before me; I could not restrain my impatience to see it a fact.

"I went to the ray chambers and set the dials according to the data given me by my calculations. To be on the safe side, I set the destruction of matter, as given by column eight, to begin on the surface of a sphere far beyond—millions of light-years beyond—the remotest spiral nebulae of which we have knowledge. Then I retired and slept for two hours. On rising I immediately attacked the two outstanding sets of equations in column nine, whose solutions, I knew then and know now, will close up the chain of control, giving the operator complete physical mastery over the destruction of matter, its creation, and the resulting control of atomic energy.

"In half an hour after awaking I was undeceived. The difficulty of the entire process—of both columns—is concentrated in those two sets of equations, seven and eighteen of column nine.

"Frequently I have thought that the solution was in my grasp. Always the precise initial value that must be assigned to a certain arbitrary constant in the seventh set of equations eludes my grasp. Not being able to determine that constant, I am unable to calculate either the correct ray intensities or the proper wave lengths implicit in the equations. Consequently I cannot adjust the dials appropriately to start the corresponding wave and ray pulses.

"In desperation I have manipulated those two sets at random, trusting that the right value of the arbitrary constant will drop out of itself. Yesterday afternoon and evening I put forth all my strength once more, and finally, before eleven o'clock convinced myself that I had at last found the true value and that I could stop the onrushing wave. A recheck of my work revealed my error; the true value was still being kept from me, and at three o'clock this morning I definitely learned the truth that my failure had been more disastrous in its consequences than any of my previous abortive attempts.

"Scoff if you like, but if it should be my last word, I declare that those two sets of equations are the living, creative intellect of all the laws represented on that sheet. They are alive and sentient, and for some wise purpose of their own they are denying me their secret. It was I who rough-hewed the laws into symbols and massed them on that paper; it is the living laws themselves that will shape the end of my labor and the destiny of the universe. . . . Nature is invincible!"

His voice had got louder and louder. The veins in

his neck and forehead stood out like ropes. The giant was obviously at the end of his tether. At any moment he might explode into violent madness. Suddenly, with a jerk, he drew himself together and snapped a question at Vera.

"Miss Ferguson, does the Bureau name the spiral in Andromeda?"

Vera nodded without speaking.

"Then we must aim our instantaneous neutralizing pulse for the Andromeda nebula when we get the solution and put it on the dials, letting it flash out through the universe from that source to halt the onrushing ruin.

"MacRobert! You solve set seven in column nine. I take set eighteen."

"Give me a pad of paper, quickly, and a pencil," said MacRobert. "I take the ray intensities, you the wave lengths. I have both sets seven and eighteen by memory."

"And I eighteen, as you say. Right. I take the wave lengths," Jevic agreed swiftly, tossing MacRobert the pad and pencil.

"Shall we be ready to put the rays and waves on the dials as you get their intensities and lengths figure by figure?" asked the Chief anxiously.

"No hurry yet. It will take only about thirty seconds to put them all on when we get them; and we must work absolutely undisturbed. We have barely one hour and forty-five minutes before the clock strikes eleven."

Jevic rolled the sleeves of his red shirt up above his

elbows, drew a straightbacked chair to the table, and sitting down prepared to work. MacRobert was already oblivious of space and time.

"It is the last battle," said Jevic, scribbling a number on his pad, "the battle of the giants. Man and his intellect against fate and the universe."

He plunged into his work.

CHAPTER XXIII

The Battle of the Giants

WITH agonizing speed the hands of the clock swept from 9:45 to four minutes to eleven. For an hour and ten minutes Jevic and MacRobert had been sitting in the intensest concentration over their calculations. During that time neither moved, except at rare intervals to write a wave length or a ray intensity on his paper. Both giants were performing their computations by sheer strength of intellect.

Wills, Thompson and Cunningham sat with Vera and Brande by the wireless, waiting in vain for tidings of the progress of the disaster. None came through until almost the last, when the interference suddenly broke down for a few seconds.

The Chief stood motionless some feet away, gazing up at the band of green light in the northeastern heavens. As the minutes passed the band increased steadily in brilliance, until at a quarter to eleven it flashed out in a vivid green, tinging every object in the vast room with duller reflections of the same nebulium color.

"The wave is almost here," Thompson whispered.

Simultaneously the call bulb of the wireless glowed red, and Vera took the last, faint message.

"The Central Bureau," she whispered. "The Andromeda nebula is beginning to glow with the green

light. They expect the nebula to disappear at any second."

"Had we better tell them?" Thompson asked in a low voice, nodding toward Jevic and MacRobert.

"No," Vera whispered. "They are doing their best. That kind of work can't be hurried."

For the few remaining seconds they sat in complete silence while the hands of the clock moved on to eleven. Brande produced a cigar and began chewing the end. Wills followed his example.

At precisely eleven o'clock Jevic flung down his pencil and leapt to his feet with a furious oath. With a shriek Miss Adams sprang to his side. The rest of them stood where they were in paralyzed astonishment.

With a wild glow in his eyes Jevic crumpled up his sheet of figures and hurled it in MacRobert's face.

"Put those on the wave dials," he shouted, "and go to hell!"

Rising deliberately MacRobert picked up the crumpled paper, unfolded it, and while he scanned the figures walked slowly round to Jevic's side.

"You fools!" Jevic thundered, including us all in a wide gesture of contempt, "you trusting idiots! I win, I win! Did you think I'd let you rob me of my life's blood and sweat? The whole universe can go to hell with you, for I win. Nature has granted me victory transcendent. Well, stupid!" he roared in MacRobert's face, "are you going to put those waves on the dials?"

MacRobert held out the paper in his left hand at arm's length.

"Look at that rubbish," he said quietly. "A meaningless jumble of twos and threes."

Simultaneously his doubled right fist shot up, catching Jevic squarely on the point of the chin. The giant's massive head shot back with a click, and he went down like a pole-axed bull. Sobbing hysterically. his secretary flung herself on the floor by his side, and took his head in her lap.

"Cunningham, bring the main sheet," MacRobert ordered. "I have memorized both sets, but bring the sheet for safety."

As he spoke he gathered up his own work, took a fresh pad of paper and started for the door.

"We had better get to the ray chambers at once. We shall find a complete outfit in the fifth. Are you ready, Wills? You, Thompson?"

They nodded. Walking rapidly, but without the least trace of panic, they reached the bronze gate and stopped dead. MacRobert all the time was calculating at top speed.

"That thing is locked," said Wills, "and only our late friend back there, whom you seem to have knocked out, Mac, knows the combination."

MacRobert did not glance aside from his work.

"Hold up that sheet, Cunningham, he ordered, "so that I can see set eighteen of equations in column nine. There is something wrong here. Verify me: the derivatives are partial only in the third equation of the set?"

"Right."

"Right," said Vera, also checking.

MacRobert continued with his work, calculating with incredible rapidity.

Wills pulled out his lighter and sparked the knob.

"I'm going to have one good smoke, boys," he announced, lighting a villainous black cigar. "You fellows had better do the same. Too bad you don't indulge, Miss Ferguson."

He fished in his pockets, finally producing a small box of "Sterling's Best."

"Try these chocolates, Miss Ferguson," he recommended. "There are not many of them, but sufficient, I imagine, to pass the time pleasantly."

"How thoughtful of you," she said, opening the box.

"I noticed them this morning," Wills remarked, "and thought you might need a little dissipation before this perfect day ends. Just look at the steam rising from Mac's red thatch. All the wheels underneath going round like mad, I'll bet."

All this time MacRobert had been working at Jevic's set of equations, now and then jotting down a figure as calmly as if he had been alone in his own room.

"What are you up to, Ferguson?" Brande inquired with mild interest, lazily exhaling a cloud of cigarette smoke. "Trying to pick the combination?"

As he spoke the massive door slid back. Not even glancing up from his work to see the miracle, MacRobert walked through, still intently writing down figures.

Vera turned back an instant.

"Miss Adams," she called. "Are you coming?"

"No," came the clear answer. She was still sitting at the far end of the room with Jevic's head in her lap.

The Chief reached back his hand, and quickly reset the combination. The gate closed.

"Jevic will be safer in there till we're through," he said.

They hastened after MacRobert and his two assistants.

"How on earth did you do it?" asked Brande.

"Very simply," answered the Chief. "When Wills and Thompson rushed in after David, I stayed behind to watch the show."

"I remember," Brande exclaimed. "At the time I wondered why you stood loitering a few feet from the door when MacRobert wanted you with him."

"I disregarded David's order because I suspected Jevic. Not," he went on rapidly, "of planning what he has just done, but of trickery in general. It seemed a fair guess that we should want to get out of Jevic's private laboratory without his consent. Our only chance—a slim one, unless he were knocked out—was the one I took. While he gloated, I watched and listened how he made the new combination. That particular music of slides and turns will stick in my head till the end of time."

"You have saved the day, father."

"No, Vera. David will do that if it is to be done."

"Has he a chance?" asked Cunningham.

"He will win," Vera asserted with quiet conviction. "You can't beat David when something puts him on his mettle."

"Then he will have to look sharp," said the Chief. "Everything is as green as grass. The wave must be almost upon us."

They overtook MacRobert at the door of the fifty-ray chamber.

"Wills and Thompson have gone ahead to take their places," he said without looking up from his work. "Ferguson, you be ready to relieve Thompson. He is acting strangely."

"The madness," Vera whispered. "He was ill the other morning."

"Vera, you be ready to relieve Wills," MacRobert ordered. "Cunningham, stand ready for emergencies. Wills is all right so far. Brande, look out for Thompson if he goes mad."

They entered the ray chamber. While speaking MacRobert had not ceased for an instant from his rapid jotting down of symbols.

"Cunningham, see that the men are in their places. Take these ray intensities to Wills," he ordered, handing him the set which he had calculated in Jevic's private laboratory. "See that nothing goes on the dials until I give the word. There may be something in Jevic's insanity about his calculations after all. This arbitrary constant is alive. I can't get it. We may be able to stop the wave partly before it sweeps over us. But I fear we shall not be able to neutralize it completely."

The sweat broke out on his face, streaming down in great drops as he never for once desisted from his calculations.

CHAPTER XXIV

11:15 P. M.

STAND here against the walls until you are needed," MacRobert directed, still calculating rapidly. "What is the time, Vera?"

"Ten minutes past eleven."

"If I give the order to run, obey instantly. There will be some local surge-back, whatever happens. I am getting the value of that arbitrary constant." The perspiration poured down his face and neck, but he showed not a trace of nervousness. Only his pencil moved more rapidly across the paper, and his breath came hard.

Down the center of the vast ray chamber, like gigantic pipe organs, the huge ray and wave generators loomed up through the soft green light streaming down through the skylights. The intricate forest of twelve foot quartz vacuum tubes, each with its delicate mechanism of glittering radianite crystals and metal coils showing in minute detail through the perfectly fused quartz, towered sheerly up eighty feet to the bronze and glass of the roof above them.

Waiting the word of command to set his dials, Wills reclined on the bench before his keyboard, unconcernedly puffing at his black cigar.

Thompson, at his station, sat erect, obviously nervous and ill at ease. He lit a cigarette, took three whiffs, and threw it away.

"Steady, old man," said Wills. "Mac will give you something to do in a minute."

Thompson did not reply. His fingers strayed to the dial keys, and he gazed fixedly up through the skylights.

"The Andromeda nebula is getting brighter," he said in a strained voice. "There it goes!" he yelled, springing from his bench.

Brande was ready. Leaping upon the frenzied man he brought him down heavily to the stone floor. While Thompson lay stunned, Ferguson quietly filled his place at the keyboard. Wills never budged.

"Sit on his arm, Alan, and see that he doesn't kick," Brande ordered, "while I give him a shot."

Cunningham did as told, and Brande dextrously administered the hypodermic.

"That will keep him quiet until it's all over," he remarked as they both got up. "Hullo, it's getting greener and brighter. I wonder if the Andromeda nebula really has flamed up and gone out?"

"If so, the wave will reach the Milky Way in less than four minutes, and us a second or two later."

Suddenly there was a hoarse cry of triumph from MacRobert, "I HAVE IT!"

"Set your dials!" his voice rang out. "Ferguson take waves, Wills rays."

The men's hands moved steadily to the keys, and paused.

"Insert keys at wave-lengths Lambda 484748 and 596368, and Omicron 8685."

Within four seconds the Chief's long dextrous fingers had set the complicated scale. Breathlessly Vera and Alan strained forward from their station against the wall, anticipating the glow in the wave tubes that would herald victory. Not a spark showed, not a color in a single tube. Only the green twilight from above deepened, and a pale green mist coiled like a seething tangle of serpents about the huge quartz columns of the wave generators. Had Ferguson made a mistake?

"Set ray intensities A 86, B 90, G 112, Z 14."

In a flash Wills made the combination. Nothing happened but an ominous quickening of the green serpents around Ferguson's generators, and a swift condensation of the green light about Wills' ray tubes. MacRobert's pencil flashed over his pad.

"Set wave length Mu 80, ray intensity L 484947. Run!"

As the generators with a deafening crackle and splutter burst into vivid crimson light drenching the ray chamber as with blood, MacRobert dived forward, flung Thompson over his shoulder and made for the door. They were through it barely in time. With a crash as their metal supports rotted and gave way, the skylights fell, wrecking the generators, and with a thunder of falling stone the roof roared down in a cascade of ruin.

"Out of the building!" shouted MacRobert. "The flame's coming!"

Before they reached the main corridor it came, a cold green intensity of whirling light, seething and eddying like the interior of a blast furnace. From the flagstones under their feet to the carved white marble of the roof eighty feet over their heads, the vast corridor was a solid sea of whirling green flame colder than ice.

"Outside!" MacRobert cried, "the building may collapse. Drag Thompson out if you can't carry him," he ordered, dropping his burden as they turned the corner and fled through the unearthly flames down the main corridor.

Ferguson and Brande picked Thompson up and staggered on with him. Vera, out of breath, began to lag. Shouldering her, Alan doubled his speed.

"Drop her!" MacRobert ordered as they neared the gate of the dragon and warrior. "Follow me!"

He charged at the massive bronze, Alan after him, thinking him insane. Already the great blocks of marble were crashing to the floor in their rear.

With his whole body MacRobert lunged at the dragon gate. It might have been made of dry sand; he was through it in a whirlwind of green dust and blinding flame.

"Get the woman!" he commanded, clambering over the shattered marble blocks which littered the floor of Jevic's private laboratory. "The metal pins in the roof have rotted," he panted, "and the whole thing may be on our heads in a second. Do you see them? They were by the table."

They peered hurriedly through the cold whirling

flames for the girl and their enemy. At last they saw the former by the drinking fountain against the south wall, but of Jevic there was no sign.

"Look at the table!" shouted MacRobert suddenly. A few long splinters and the tail of Jevic's tiger skin projected beneath a pile of shattered marble.

"Take her away, Cunningham," MacRobert ordered, "I'll dig for Jevic."

In a fury of haste he began hauling the wreckage apart. Then stopped and pointed silently. There, lying doubled up in death, with his red shirt torn to ribbons, his sightless eyes wide open on the ruin that he had wrought, lay the shattered giant, imposing even in collapse.

Nothing could be done. It was a matter of saving the living. With a gesture of despair, MacRobert turned away.

As they panted forward over the rubbish, a wild figure came bounding toward them through the seething flames. It was Chung. A great block falling from the roof burst to splinters not ten feet in front of him; he never hesitated, but changing his course, leapt toward the place where Jevic lay. Babbling in Chinese he grasped his master's ankles, just as another huge slab of marble dropped, and in a cloud of dust and flame, ground the faithful servant and his dead master into an indistinguishable smear of bloody flesh.

As the fleeing fugitives cleared the last fragments of the gate, a handful of green sparks fell in a shower, dusting Miss Adams's hair. It seemed to bring her out of her faint. She stirred.

"Are those green flames the end?" she whispered, as Cunningham struggled with her in his arms, around and over the fallen blocks in the corridor.

"Yes," he answered.

"Why are they cold? Why don't they burn?"

"Because MacRobert has saved the universe from annihilation. These are only the backwash of ruin, mere eddies of the destructive wave which he has stopped. We have won."

"And Mr. Jevic has lost. Oh, poor man, poor man!"

"You needn't worry about Jevic's feelings any more," said Cunningham.

Something in his voice made her look at him.

"Oh, what is it?" she begged. "What has happened? Where is he?"

She read the answer in his eyes.

"Put me down," she said faintly.

"No, you're not fit to walk yet."

"Put me down," she repeated, struggling weakly to free herself. Then suddenly she fell back again in a dead faint.

* * * * * * * *

In the middle of a small flower bed Miss Adams lay, conscious now, moaning and wringing her hands in an agony of grief for the master she had served so faithfully and lost. The others stood grouped around her, with cold green flame coiling and uncoiling about them.

"Will this last long?" Cunningham asked MacRobert.

"Not very, so make the most of it. Look up, Man!"

Infinitely distant, but more vivid in its cold intensity than the surging billows of flame which lapped the earth, the Milky Way shone athwart the heavens in a transparent blaze of blinding emerald light.

"You caught the tide when it was highest," said the Chief. "A second later and we should have gone under. Lucky you caught it where you did. This surge of destruction around the laboratory was only to be expected. We couldn't well have stopped this too. The ray tubes were bound to draw the bolt, or at least this little spark of it, when the crimson started. As it is we neutralized the worst of even this—we're still here, not wiped out. But this little flare-up shows what the wave would have done had it struck full on. Even in that infinitesimal fraction of a second while our outward pulse was kicking free of the earth, it started a back surge that will be felt for thirty miles."

"Yes," MacRobert agreed, "we stopped it up there in the Milky Way."

"Will the galaxy be destroyed?" Brande asked anxiously. "Not that it will make any vital difference to us, I suppose, but I should hate to miss an old friend on my night walks."

"It won't go," said MacRobert. "If it had been going to disappear, it would have gone in a flash, not in a slow flame like that. It is probably going through on a grand wholesale scale what we are experiencing to a very slight extent for possibly thirty or fifty miles all around this holy spot. Simple universal destruction of metals, that's all. Had the galaxy got the full smash

it would never have had time to shine like that, and we should have missed the show of our lives."

"Simple destruction of metals? That's enough. Our car is only fit to scoop up with a shovel," Brande retorted; "and it's a long way from here to town. We'll have to hoof it. Thank God," he added in a whisper, nervously feeling his clothes, "our buttons are made of bone and not metal."

"Then let us stock up with provisions from the hotel here," Vera suggested, "and take it in two stages —or more. We shall never see anything like this again."

"The Milky Way is dimming already," said the Chief. "Let us stock up and get back at once. I don't want to spoil my first impression by seeing it dwindle down to dust again."

"Look!" Alan cried. "There goes the laboratory." They turned in time to see the collapse of the main building. In a thundering cloud of fiery green dust the roof fell in, and the walls bulged. For a second they hung motionless on the surging green billows of flame. Then in a torrent of marble and granite the whole mass thundered to the ground.

The Doctor wiped the perspiration from his face. In the fierce green light his sudden pallor gave him a ghastly aspect.

"Jevic's tomb," he said simply, and for a full minute there was silence.

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Stunned by the hugeness of the events in which they had taken part, and utterly worn out by so many hours

of agonizing emotion and suspense, the group of numbed survivors stood there, stricken to stillness, scarcely realizing that the cold green fire had passed, and that the cosmic disaster which had been started by the insane presumption of the most gigantic intellect the world had ever seen, had been turned aside once and for all from the earth and heavens.

THE END